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Farm Size and the Capital Acquisition Problem on New Hampshire Dairy Farms

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Summary

1. The broad objective of this study is to explore and, as far as possible, determine the effect of farm size on the ability of farm operators to build up equity in farm capital. The problem is analyzed by use of "representative" dairy farms whose organizations are based on a survey of actual farms. This analysis is supplemented by a report of how dairy farmers actually obtained their initial and subsequent capital.

2. The general relationship between herd size and capital investment is positive. For the farms analyzed, total capital ranged from $24,000 at 10 animal units to $104,000 at 90 animal units. There was a great overlap in herd sizes between the one-, two-, and three-man farms. As between the one- and two-man farms, total capital at each herd size was not greatly affected by size of labor force. Total capital *per animal unit* falls rather sharply until a size of about 30 animal units is reached. It then raises as herd size increases. This suggests some diseconomies of scale. *Equipment* capital, through most of the herd size range, on the two-man farms is *higher* per animal unit than on the one-man farms. This suggests some tendency to equip men. There was no evidence of capital-labor substitution.

3. Inventories and budgets of one-, two-, and three-man farms of different herd sizes are developed from the survey farms. For these farms there is shown capital, income, potential savings of operators, potential ability to accumulate equity under full credit conditions, ability to meet maximum credit terms of leaders, and ability of farm workers and tenant operators to accumulate the equities required by lenders. The principal hypothesis of this study is substantiated: equity accumulation is easier on the larger farms — indeed, it is only possible there. Accumulation is difficult on all the representative farms. Larger sized farms are also necessary to repay maximum loans from Cooperative Farm Credit, New Hampshire banks, or the Farmers' Home Administration. The necessary size of herd to meet the terms of each lender depends on prices, whether depreciables were bought new or used, and on difference between lenders as to percentage of actual value they will lend on capital. In all cases, obtaining the starter's equity is a problem. Farm workers do not have the saving potential to accumulate the required equity for any of the representative farms. Tenant operators of several of the larger farms might accumulate the required equities in those farms in 20 years but only on the largest farm and under the higher prices could it be done in 10 years.

4. The capital accumulation histories of the farmers in the survey are summarized to show how operators of different sized farms and of different ages obtained capital to become established and to grow. A majority of the operators of the large farms got started through inheritance or family aid. A minority used credit heavily. The smaller

operators got started later in life and with less assistance. The larger operators used considerable credit to grow. The smaller ones depended more on saving. There were indications that the time span necessary to accumulate, develop, and maintain the capital represented in the larger farms stretched over more than one generation.

5. The larger size farms have the greater capital accumulation potential. They are better able to meet repayments on either 100 percent or more conservative credit. *Under the more conservative credit terms, however, the beginner's equity is a severe obstacle. This equity can be accumulated only if the farmer has the resources of a large farm to use.* If farmers are to progress toward full ownership out of earnings, they need the use of large farms. This in turn requires increased suitable rental arrangements or increased use of practically 100 percent credit.

6. Although the analysis is of a sample of New Hampshire dairy farms, these broad conclusions may well have considerable application to the bulk of family operated commercial farms of the United States.

Farm Size and the Capital Acquisition Problem on New Hampshire Dairy Farms

By W. K. Burkett*

Chapter I. Problems and Procedure

PROBLEMS

FARMS have increased in size very markedly over the past several years, and the purchase prices of physical property used in farming (which is referred to as farm capital in this study) have undergone sharp increases. Taken together these have resulted in greatly expanded capital requirements for individual farms. As a result, several types of questions have developed or become intensified: (1) there are signs of doubt and confusion among farmers and would-be farmers as to whether, and how, to obtain farming capital, (2) there are questions as to whether capital is available and used in ways and amounts to attain the greatest economic efficiency, and (3) there are questions of whether equality of opportunity among farmers and for farmers can be improved. Moreover, public and private agencies serving agriculture are raising questions about their decisions which may modify developments under the first three types of problems.

PROCEDURE

Relevant Economic Theory

The most relevant theory in respect to capital accumulation seems to be: (1) the application of marginal analysis to determine optimum capital use within and between farms, and (2) the application of the theory of scale to determine optimum size of farm for capital acquisition. In this study the emphasis is on the latter but the former is not wholly ignored.

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Special thanks are due George E. Frick, Agricultural Economist, Agricultural Research Service, U. S. Department of Agriculture, and Silas B. Weeks, Economist, Cooperative Extension Service, University of New Hampshire, for their painstaking review and suggested changes; to Herbert Scheibel, for preparing the figures; and to Mrs. Doris Batchelder, for careful preparation of the manuscript.

Methods

All of the dairy farms in two southeastern towns[1] and in two northern towns of New Hampshire bordering the Connecticut River were visited and a set of data secured. The emphasis in this survey was on: (1) enumeration and valuation of current physical capital, (2) how the farmers became established as farm operators, and (3) history of progress to their current status. Data from these schedules were used to: (1) indicate actual capital values on farms of different sizes, (2) establish representative farm inventories and budgets from which to study size, capital, income, and capital accumulation relationships, and, (3) record case histories from which some generalization can be made as to how farmers actually have acquired capital. Another source of data for studying size and various capital relationships was Connecticut Bulletin 285[2].

Use of Results

The results of this study should be of interest to farmers, prospective farmers, suppliers of farm credit, and those concerned with farm credit policy.

This study develops some fundamental relationships between size, capital, and income on New Hampshire dairy farms, and various aspects of the farmer's problem of obtaining capital. The latter is referred to in this study as the capital accumulation problem.

The results presented in this bulletin cannot be taken as the precise answer to any individual's problem because individual opportunities and abilities differ. Also the prices and costs used here are unlikely to fit exactly any individual situation at present or over time. However, the author believes that a careful reading of this bulletin can give considerable help and guidance in the solution of individual problems.

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[1] A "town" in New England is the same civil division as a township outside New England. To follow the local terminology the word town is used in this study.

[2] *Production Efficiency on New England Dairy Farms, 2. Economies of Scale in Dairying — An explanation in Farm Management Research Methodology,* I. F. Fellows, G. E. Frick, and S. B. Weeks, Storrs Agricultural Experiment Station Bul. 285, February, 1952.

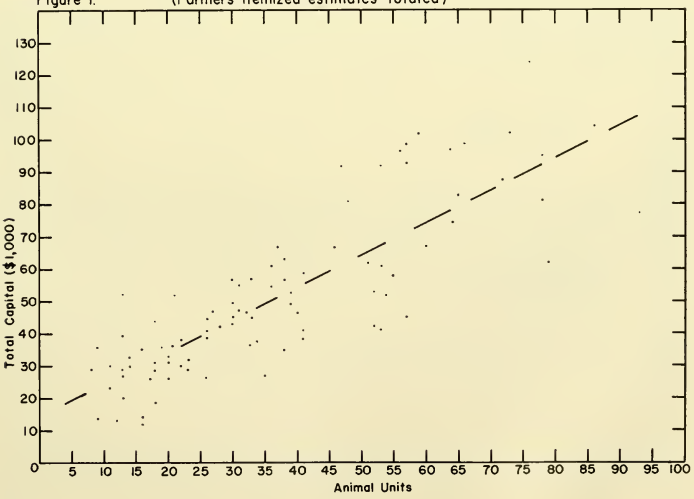
Chapter II. Capital on Dairy Farms

THE purposes of this chapter are: (1) to describe and analyze the kind and amount of capital on the farms surveyed and (2) to provide a foundation for the representative farms through which capital accumulation is studied in Chapter III.

The information providing the basis for this chapter was obtained from the dairy farms in four New Hampshire towns. The valuing of the current physical capital of each dairy farm was done individually on the farmer's estimate of current purchase value of the item; that is, what he would have to pay if he were to buy it in its present condition. For purposes of this study it was important to keep values between farms consistent, but the value levels secured are probably not consistent with present actual costs. The study farms were predominantly wholesale dairy farms. As far as possible, capital items and labor attributable to non-dairy enterprises or to retail dairying were eliminated when relevant to a particular problem. Since farms varied in the proportion of young stock to milking cows, herd size is expressed as "animal units" — one cow, one bull, or two head of young stock counting as one animal unit.

HERD SIZE AND TOTAL CAPITAL, SURVEY FARMS

Figure I. (Farmers' itemized estimates totaled)



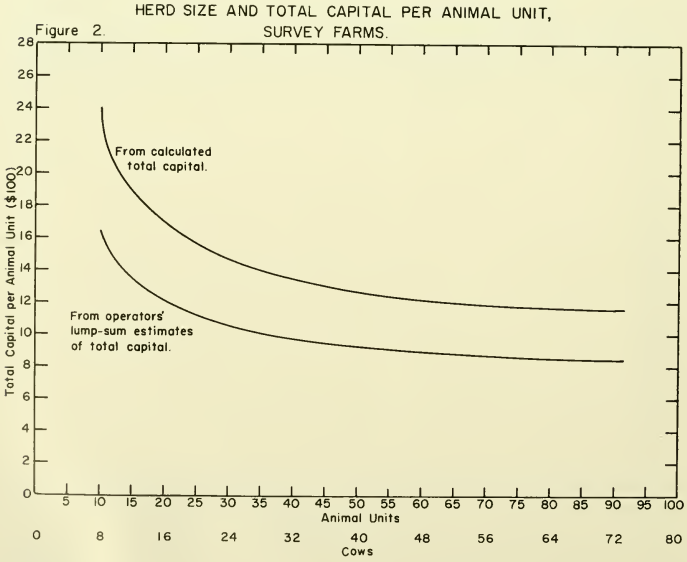
HERD SIZE AND CAPITAL

Figure 1 shows the total capital investment as determined from farmer interview of all farms in the survey, plotted against herd size in animal units. Figure 1 also shows a regression line fitted to the plotted points.[3]

Table 1. Total Capital per Animal Unit, Survey Farms

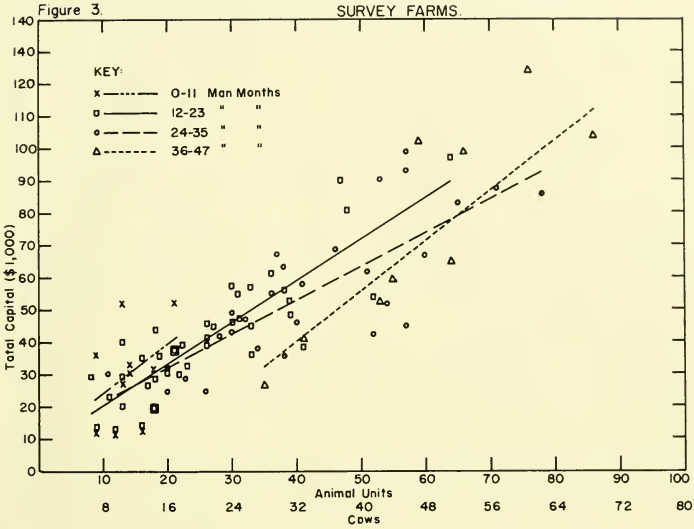
Animal Units	Capital per Animal Unit	
	From Calculated Total[1]	From Operator's Lump-sum Estimates
Number	Dollars	Dollars
10	2,400	1,650
20	1,700	1,195
30	1,467	1,040
40	1,350	965
50	1,280	920
60	1,233	887
70	1,200	864
80	1,175	849
90	1,156	836

[1] Calculated from inventory lists.



[3] The correlation coefficient is 0.82.

Figure 3. LABOR FORCE, HERD SIZE, AND TOTAL CAPITAL, SURVEY FARMS.



Dividing total capital by animal units gives total capital per animal unit as shown in Table 1 and in Figure 2. It may be observed that total capital per animal unit declines rather steeply to at least 30 animal units (a 24 cow herd with replacements[4]) and has nearly leveled out by 70 animal units (a 56 cow herd with replacements).

LABOR FORCE AND CAPITAL

New England dairy farms are commonly organized around one or more full time workers plus various amounts of part-time help. Hence, as an aid to establishing the representative farms, it was decided to study herd size and capital of the survey farms after first grouping them by size of labor force. The labor force was measured in "man months".[5]

Total Capital

Figure 3 shows the scatter and the regression lines for the survey farms sorted by man months and then plotted for herd size and total capital[6].

[4] Assuming about a four-year herd life with enough heifers to replace about 25 percent of the cows each year.

[5] A full-time, able-bodied man would constitute 12 man months. Very young, very old, and less than fully able workers were counted at appropriate fractions of an able-bodied man. Man months of part-time workers were determined by adding the time worked.

[6] The coefficients of correlation are: 0-11 man mo. group 0.336; 12-23 man mo. group 0.864; 23-35 man mo. group 0.880; 36-47 man mo. group 0.754.

The amount of total capital for any herd size may be read from these lines. Also, by taking the capital reading for any herd size on the various man month lines one may get some picture of the substitution of capital and labor. On the whole, total capital for a given herd size is not as greatly different between man month groups as might have been expected. Indeed, at some points the larger labor force has more capital for the same herd size. Apparently total capital is closely related to herd size and is not greatly affected by size of labor force.

The points plotted in Figure 3 are identified only by man month ranges. However, when they were labeled with specific months on individual town diagrams there was no discernable pattern in the location of specific numbers of months within the ranges.

Perhaps the most striking feature in Figure 3 is the great overlap of herd size between the labor force groups. The herds handled by successively larger labor forces are about the same sizes at the lower limits of the labor force groupings.

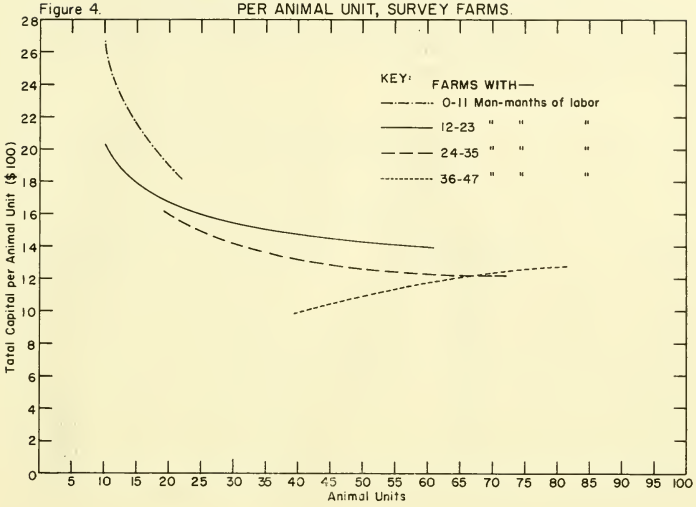
Table 2 and Figure 4 show the total capital *per animal unit* at different herd sizes for the different man month groups. Two things are of interest here. One is the change in average amount per animal unit as herd size changes within each labor force group. In the 0-11 month group, capital per animal unit falls sharply with herd size increase within the narrow range of sizes shown. In the 12-23 month group, capital per animal unit falls fairly sharply at first and then tends to level out. In the 24-35 month group the fall is more moderate and more continuous. In the 36-47 month group surprisingly there is a *rise* in capital per animal unit as herd size increases.

The second thing of interest in Table 2 and Figure 4 is the capital per animal unit at each herd size as between labor force groups. The 12-23 month group uses considerably less capital per animal unit than the 0-11 month group. The 24-35 month group uses only a little less than the 12-23 month group at the lower herd sizes but the spread widens as herd size increases. The 36-47 month group at its smaller herd sizes uses less capital per animal unit than the 24-35 month group but at its larger sizes uses more. This strongly suggests a leveling off of economies in capital use after a herd size of 30 to 40 cows.

Table 2. Amount of Labor, Herd Size, and Total Capital per Animal Unit, Survey Farms

Animal Units	Total Capital per Animal Unit			
	Farms with 0-11 Man Mos. of Labor	Farms w/ 12-23 Man Mos. Labor	Farms w/ 24-35 Man Mos. Labor	Farms w/36-47 Man Mos. Labor
Number	Dollars	Dollars	Dollars	Dollars
10	2,640	2,030		
15	2,147			
20	1,900	1,665	1,600	
30		1,540	1,423	
40		1,475	1,330	992
50		1,428	1,274	1,102
60		1,402	1,235	1,178
70			1,206	1,233
80				1,275

Figure 4. LABOR FORCE, HERD SIZE, AND TOTAL CAPITAL PER ANIMAL UNIT, SURVEY FARMS.



Equipment Capital

Machinery and equipment is the category in which capital supposedly would be most substituted for labor. Figure 5 shows the scatter and regression[7] lines for the survey farms sorted by man months of labor and then plotted for herd size and equipment capital. The same information for equipment capital may be read off Figure 5 as could be read off Figure 3 for total capital.

Table 3 and Figure 6 show equipment capital per animal unit under the different labor forces. The same comparisons may be made as were made with total capital. The most interesting feature here is that, except in the largest herd sizes, the 24-35 month group uses *more* equipment capital per animal unit than the 12-23 month group. This suggests a tendency to equip *men* rather than substitute capital for labor or vice versa. The 12-23 month group may have shown no tendency to reduce equipment capital per animal unit in the larger herds because of a necessity to add large amounts of capital in equipment to attain the larger herd sizes. The 36-47 month group *may* have been severely limited in equipment at the lowest herd sizes and may have been encountering diminishing effectiveness of management at the upper herd sizes. A feature common to the 12-23 and 36-47 month groups may be transition to larger size with equipment investment leading the way.

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[7] The correlation coefficients are: 12-23 man month group 0.660; 24-35 man month group 0.504; 36-47 man month group 0.581.

The information in this study is not sufficient to explain all the relationships found between herd size, labor force, total capital and equipment capital. However, it appears that considerably more than the restricted, formalized concepts of production economics may be needed to adequately explain the capital found on farms.

Table 3. Amount of Labor, Herd Size and Equipment Capital per Animal Unit, Survey Farms

Animal Units	Equipment Capital per Animal Unit		
	Farms with 12-23 Man Mo. of Labor	Farms with 24-35 Man Mo. of Labor	Farms with 36-47 Man Mo. of Labor
Numbers	Dollars	Dollars	Dollars
10	198.		
15	192.	316.	
20	190.	270.	
30	187.	224.	
40	185.	202.	152.
50	185.	188.	166.
60	184.	179.	174.
70		172.	181.
80			185.

Figure 5. LABOR FORCE, HERD SIZE, AND EQUIPMENT CAPITAL, SURVEY FARMS.

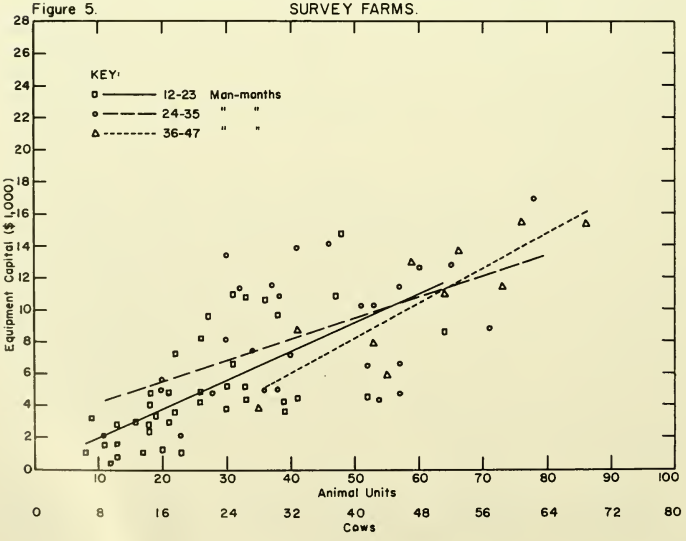
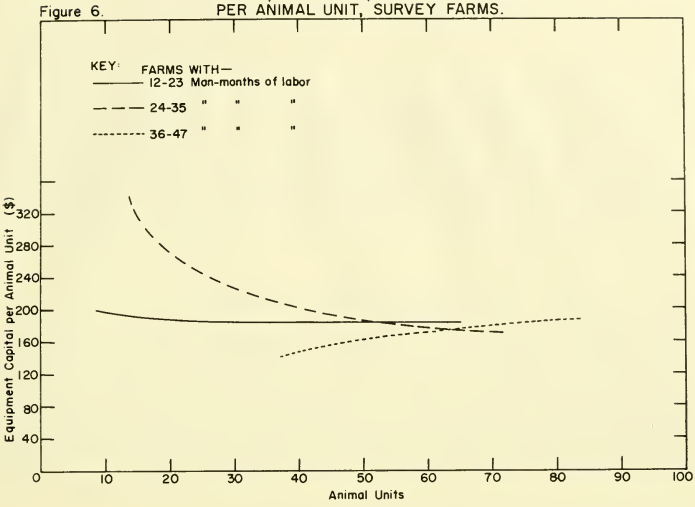


Figure 6. LABOR FORCE, HERD SIZE, AND EQUIPMENT CAPITAL PER ANIMAL UNIT, SURVEY FARMS.



Chapter III. Farm Size and Capital Acquisition Problems

THIS chapter explores some basic relationships between farm size and capital accumulation potential. Underlying the procedure is a hypothesis that the theory of scale is relevant to the problem. More specifically, as the theory of scale suggests the likelihood of an optimum size of firm (or farm) in the sense of maximizing net income, we may hypothesize that there is also an optimum size in the sense of relationship of potential savings to capital.[8]

REPRESENTATIVE FARMS

To study the relationship of scale and capital, farms which are similar in all respects except size must be used. This can be done only by developing synthetic or representative farms. The principal source of data used was the farms surveyed in this study. The intent was to retain the general organization and size pattern of the surveyed farms. However, management was standardized to the extent of using the same production rates and production inputs (feed, fertilizer, etc.) for all farms.

Development of Inventories and Budgets

The first step was to develop inventories for representative farms which retained, as far as practicable, the size and capital characteristics of the surveyed farms. Labor force, herd size, and capital relationships on these surveyed farms with between 12 and 48 months of labor became the starting point for development of the representative farms. Herd sizes were selected for each of the "man sizes" to cover most of the range of sizes as shown for the respective man month groups in Figures 3 and 5 of Chapter II. The representative farms tend to be a little larger than the survey farms.

The equipment listed for the survey farms of similar labor force and herd size was tallied and used as the basis for the equipment inventories of the representative farms. There was considerable variation even in major items on the survey farms. For instance, some of the larger farms still depended on hay loaders. To some extent this probably was a result of different farms being in different stages of the equipment modernization process. The representative farms use the type of equipment toward which that size group seemed to be moving. This is a divergence from the survey picture in the same direction as that of size mentioned above.

Machinery was not "rationalized" in the sense of using only the most efficient elements of a roughage harvesting system. Hence, there may be some "surplus" of equipment but not more than there appeared to be on the farms surveyed.

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[8] For applied use, more specific terms have to be substituted for "savings" and "capital" depending on the specific means by which farmers obtain and hold capital.

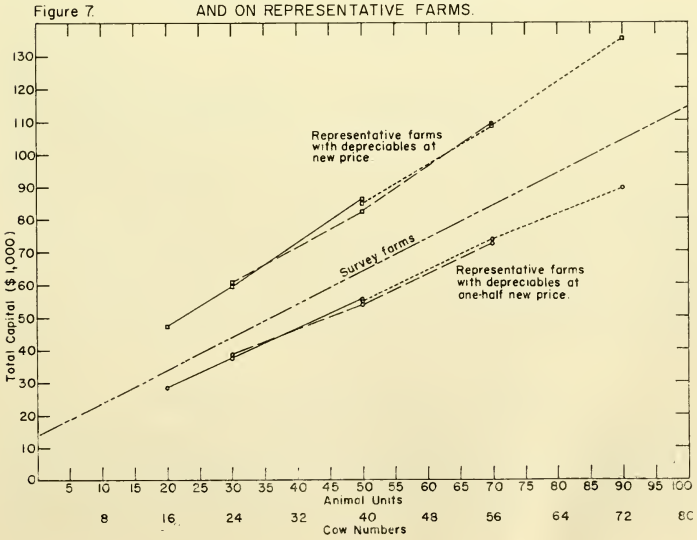
There is no livestock other than dairy cattle on the representative farms. Except for the elimination of bulls, there is little difference from the survey farms. In Chapter II herd size was described in animal units. In the representative farms animal units are reconverted to milking age cows with calves and heifers enough to replace 25 percent of the cows each year. This somewhat overstates the proportion of young stock in the southeastern areas and understates it for the northern areas.

In the case of land, it was considered that quality was so variable and quantity so imperfectly adjusted to needs that it was necessary to resort to a largely synthetic approach. This was done by basing crop and pasture land acreage on roughage requirements of the herd and then adding "other" land (rough brush land) of equal acreage and an appropriate amount for the farmstead.

Buildings were another type of capital for which existing sizes and valuations did not closely fit the present herd size. In the representative inventories, buildings were adjusted to the particular herd size and they were assumed to be modern in design and material. This is another change from the survey farms which should permit a given labor force to handle a little larger herd.

In general, prices in the representative inventories and budgets approximate those of 1952. They may be seen in the several inventories and budgets. Equipment prices were obtained from dealers. Land prices were approximately those obtained on the survey.

HERD SIZE AND TOTAL CAPITAL ON SURVEY FARMS
Figure 7. AND ON REPRESENTATIVE FARMS.



Comparison of Capital on Survey and Representative Farms

Figure 7 shows the regression lines of total capital and herd size for three situations. The middle line is values from the actual survey farms. Above it are the representative farms with depreciables (buildings, improvements, and equipment) at new price. At a lesser distance below are the representative farms with depreciables valued at one-half of new price, as they might be on the average after a period of "normal" times. Equipment on survey farms, on the whole, probably was less than half depreciated since many of the major items were purchased after World War II. No firm statement can be made about buildings.

The complete inventories and budgets for the representative farms are shown in Appendix Table II A, B, C, D, E, F, G, H, I and III A, B, C, D, E, F, G, H, I.

Size, Capital Investment, and Income

Table 4 is a summary of the detailed inventories and shows the relationship of size to capital.

Table 5 shows some frequently calculated types of income measures for the different size farms. With net operator's income as the residual, the effect of size is striking. With $5.00 milk the representative farms have significant positive incomes only at the largest herd size of each labor group. With 10 percent higher prices these are still the only sizes that have very acceptable incomes.

Price — Cost — Income Relationships

It is necessary to examine the price-cost-income relationship for the representative farms. These calculations are shown in Table 6. With other income related to $5.00 milk and a hired man's wages allowed the operator, only the 72-cow farm has costs of less than $5.00. With a more reasonable allowance of $3,000 to the operator, $5.25 milk would about cover costs of the *largest* herds of each labor group. A milk price of $5.50 would about cover the costs of the 2-man, 40-cow and 3-man, 56-cow herds in addition. We might thus reason that the $5.50 price is more appropriate to the cost structure of the representative farms for the long-run. It cannot be determined here whether the costs of the representative farms are too high or the $5.00 per cwt. milk too low for the long run, but it does suggest that some of the following figures relative to ability to save or to pay debts from income are on the conservative side for the long-run.

EQUITY ACCUMULATION POTENTIALS

Table 7 shows the equity accumulation potential of the representative farms. The procedure was to start with net farm income (which is net cash minus depreciation) and subtract an allowance for family living expenses. The remainder is available for interest on capital and for savings or debt payment. This remainder is then expressed as a percent of total capital.

Table 4. Size and Capital Investment, Representative Farms

Investment	1 man farms			2 man farms			3 man farms		
	16 cows	24 cows	40 cows	24 cows	40 cows	56 cows	40 cows	56 cows	72 cows
	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
BUILDINGS AND EQUIPMENT AT NEW PRICE									
Land	6,370	9,015	14,450	9,520	14,450	20,920	15,290	20,920	25,435
Farm building and improvements	17,100	23,040	33,935	23,385	33,935	45,420	34,270	45,420	56,300
House	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000	12,000
Cattle	4,200	6,200	10,400	6,200	10,400	14,600	10,400	14,600	18,800
Equipment	7,600	9,660	15,460	9,480	12,770	16,950	12,270	16,780	22,720
Total	47,350	59,915	86,245	60,585	83,555	109,890	84,230	109,720	135,255
BUILDINGS AND EQUIPMENT AT ½ NEW PRICE									
Land	6,370	9,015	14,450	9,520	14,450	20,920	15,290	20,920	25,435
Farm building and improvements	8,600	11,520	16,970	11,690	16,970	22,710	17,135	22,710	28,150
House	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000
Cattle	4,200	6,200	10,400	6,200	10,400	14,600	10,400	14,600	18,800
Equipment	3,840	4,830	7,730	4,740	6,385	8,475	6,135	8,390	11,360
Total	28,840	37,565	55,550	38,150	54,205	72,705	54,960	72,620	89,745

Table 5. Size and Income, Representative Farms

	1 man farms			2 man farms			3 man farms		
	16 cows	24 cows	40 cows	24 cows	40 cows	56 cows	40 cows	56 cows	72 cows
	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
WITH MILK $5.00 PER CWT.									
Total cash income	7,322	11,026	18,458	11,026	18,458	25,880	18,458	25,880	33,312
Total cash expenses	4,934	6,989	11,043	8,872	12,684	17,594	14,665	18,814	22,456
Net cash income	2,388	4,037	7,415	2,154	5,774	8,286	3,793	7,066	10,856
Depreciation	1,394	1,758	2,623	1,727	2,388	3,119	2,299	3,110	3,911
Net farm income	994	2,279	4,792	427	3,386	5,167	1,494	3,956	6,945
Int. on investment[1]	1,450	1,878	2,777	1,908	2,710	3,635	2,748	3,631	4,487
Net operator income	—456	401	2,015	—1,481	676	1,532	—1,254	325	2,458
WITH 10% HIGHER PRICES RECEIVED									
Total cash income	8,054	12,129	20,304	12,129	20,304	28,468	20,304	28,468	36,643
Total cash expenses	4,934	6,989	11,043	8,872	12,684	17,594	14,665	18,814	22,456
Net cash income	3,120	5,140	9,261	3,257	7,620	10,874	5,639	9,654	14,187
Depreciation	1,395	1,758	2,623	1,727	2,388	3,119	2,299	3,110	3,911
Net farm income	1,725	3,382	6,638	1,530	5,232	7,755	3,340	6,544	10,276
Interest on investment[1]	1,450	1,878	2,777	1,908	2,710	3,635	2,748	3,631	4,487
Net operator income	275	1,504	3,861	—378	2,522	4,120	592	2,913	5,789
WITH 10% LOWER PRICES RECEIVED									
Total cash income	6,590	9,923	16,612	9,923	16,612	23,292	16,612	23,292	29,981
Total cash expenses	4,934	6,989	11,043	8,872	12,684	17,594	14,665	18,814	22,456
Net cash income	1,656	2,934	5,569	1,051	3,928	5,698	1,947	4,478	7,525
Depreciation	1,395	1,758	2,623	1,727	2,388	3,119	2,299	3,110	3,911
Net farm income	261	1,176	2,946	—676	1,540	2,579	—352	1,368	3,614
Interest on investment[1]	1,448	1,878	2,777	1,908	2,710	3,635	2,748	3,631	4,407
Net operator income	—1,187	—702	169	—2,584	—1,170	—1,056	—3,100	—2,263	—873

[1] Rate: 5% on full value of land and cattle. 5% on ½ new value of buildings and machinery.

This is perhaps the most concise means of expressing the relation between size of farm and the operator's net capital accumulation potential. It can be seen that with $5.00 milk the smallest herd sizes in each man size group has a negative figure; they cannot quite *maintain* their capital, let alone acquire equity. It can also be seen that, with $5.00 milk, only the largest herd sizes (and with investment in depreciables at one-half new price) have a residual equal to conventional interest rates. With 10 percent high prices, the largest herds of each man-size group have residuals at least equal to conventional interest with depreciables at new price. When depreciables are at half new price the two and three man middle-size herds are also included. Note that the smallest farms have a slight negative figure; that the largest farms have left more than a conventional interest rate, that is, they have *some* margin for accumulation; and that there is a greater gain from having a large size herd per man than from increasing the "man size".

With 100 Percent Debt Amortized

It is necessary to determine what these figures mean in terms of ability to amortize credit. Assuming that all capital is borrowed, could the debt be amortized and how long would repayment take? With a 3 percent average interest cost in the amortization, $5.00 milk, and depreciables at new price, Table 8 indicates that more than a lifetime would be needed on the largest farms of each man size group, while the others have no repayment potential at all. With $5.00 milk and depreciables at one-half new price, the largest farms of each man size can about pay off in a working life. With $5.50 milk and depreciables at new price, the largest farms of each man size group can accumulate full equity in a working life; with depreciables at one-half new price, the middle sizes of two and three-man farms can also pay off in a working life; while the largest farms of each man size group can accumulate full equity in less than 20 years.

Table 6. Size and Costs, Representative Farms

	1 man farms			2 man farms			3 man farms		
	16 cows	24 cows	40 cows	24 cows	40 cows	56 cows	40 cows	56 cows	72 cows
	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
Production									
Cwt. of milk	1,360	2,040	3,400	2,040	3,400	4,760	3,400	4,760	6,120
Expenses									
Total cash expenses	4,934	6,989	11,043	8,872	12,684	17,594	14,665	18,814	22,456
Depreciation	1,394	1,758	2,623	1,727	2,388	3,119	2,299	3,110	3,911
Interest on investment	1,450	1,878	2,777	1,908	2,710	3,635	2,748	3,631	4,487
Total expenses	7,778	10,625	16,443	12,507	17,782	24,348	19,712	25,555	30,854
Non-milk income	—632	—936	—1,568	—936	—1,568	—2,190	—1,568	—2,190	—2,822
Net expenses	7,146	9,689	14,875	11,571	16,214	22,158	18,144	23,365	28,032
Cost of production[1]									
With $2,400 allowance for operator									
Total	9,546	12,089	17,275	13,971	18,614	24,558	20,544	25,765	30,432
Per cwt..	7.02	5.93	5.08	6.85	5.48	5.16	6.04	5.41	4.97
With $3,000 allowance for operator									
Total	10,146	12,689	17,875	14,571	19,214	25,158	21,144	26,365	31,032
Per cwt.	7.46	6.22	5.26	7.14	5.65	5.29	6.22	5.54	5.07

[1] With non-milk income 10% higher the cost of production per cwt. would drop, in *each* case, by 5 cents.

Table 7. Size and Equity Accumulation Potential, Representative Farms (with potential savings shown as a percent of total capital)

	1 man farms			2 man farms			3 man farms		
	16 cows	24 cows	40 cows	24 cows	40 cows	56 cows	40 cows	56 cows	72 cows
	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
WITH MILK $5.00 PER CWT.									
Net farm income[1]	994	2,279	4,792	427	3,386	5,167	1,494	3,956	6,945
Family living allowance	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800
Remainder available for interest, savings, debt payment	—806	479	2,992	—1,373	1,586	3,367	—306	2,156	5,145
The remainder as % of total capital									
With building and equipment at new price	—1.70	0.80	3.47	—2.23	1.90	3.06	—0.36	1.97	3.80
With building and equipment at ½ new price	—2.78	1.28	5.39	—3.54	2.92	4.63	—0.56	2.97	5.73
WITH 10% HIGHER PRICES RECEIVED									
Net farm income[1]	1,725	3,382	6,638	1,551	5,232	7,755	3,340	6,544	10,275
Family living allowance	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800	1,800
Remainder available for interest, savings, debt payment	—75	1,582	4,838	—249	3,432	5,955	1,540	4,744	8,475
The remainder as % of total capital									
With building and equipment at new price	—0.16	2.64	5.61	—0.41	4.11	5.42	1.83	4.32	6.27
With building and equipment at ½ new price	—0.26	4.21	8.71	—0.65	6.33	8.19	2.80	6.53	9.44

[1] Net cash income minus depreciation.

Table 8a. Size and Equity Accumulation Potential, Representative Farms (approximate number of years to amortize a 100 percent loan)

	1 man farms			2 man farms			3 man farms		
	16 cows	24 cows	40 cows	24 cows	40 cows	56 cows	40 cows	56 cows	72 cows
WITH MILK $5.00 PER CWT.									
A. With buildings and equipment at new price									
% of total capital available for interest, savings, and debt payment[1]	—1.70	0.80	3.47	—2.23	1.90	3.06	—0.36	1.97	3.80
% remaining after 3% interest charge[2]	—	—	0.47	—	—	0.06	—	—	0.80
Approximate No. of years to retire principal	—	—	213	—	—	1,667	—	—	125
B. With buildings and equipment at ½ new price									
% of total capital available for interest, savings, and debt payment[1]	—2.78	1.28	5.39	—3.54	2.92	4.63	0.56	2.97	5.73
% remaining after 3% interest charge[2]	—	—	2.39	—	—	1.63	—	—	2.73
Approximate No. of years to retire principal	—	—	42	—	—	61	—	—	37

[1] From Table 7.

[2] Less than full interest rate is paid in average years if principal is being retired.

Table 8b. Size and Equity Accumulation Potential, Representative Farms (approximate number of years to amortize a 100 percent loan)

	1 man farms			2 man farms			3 man farms		
	16 cows	24 cows	40 cows	24 cows	40 cows	56 cows	40 cows	56 cows	72 cows
WITH 10% HIGHER PRICES RECEIVED									
A. With building and equipment at new price									
% of total capital available for interest, savings, and debt payment[1]	—0.16	2.64	5.61	—0.41	4.11	5.42	1.83	4.32	6.27
% remaining after 3% interest charge[2]	—	—	2.61	—	1.11	2.42	—	1.32	3.27
Approximate No. of years to retire principal	—	—	38	—	90	41	—	76	31
B. With building and equipment at ½ new price									
% of total capital available for interest, savings, and debt payment[1]	—0.26	4.21	8.71	—0.65	6.33	8.19	2.80	6.53	9.44
% remaining after 3% interest charge[2]	—	1.21	5.71	—	3.33	5.19	—	3.53	6.44
Approximate No. of years to retire principal	—	83	18	—	30	19	—	28	16

[1] From Table 7.

[2] Less than full interest rate is paid in average year, if principal is being retired.

Chapter IV. Size and Ability to Meet Conventional Credit Terms

HAVING developed *basic relationships* between farm size and capital accumulation potential, we may now examine the ability of these same farms to meet *conventional credit terms* and to acquire ownership through them. This may be worth while in these respects: (1) individuals trying to obtain the use of and equity in farming capital are faced with these credit terms and (2) lenders may be interested in adjusting their credit terms more closely to fundamental capital accumulation potentials. In the following sections the practical maximum credit terms of the three most prevalent lending institutions are compared with the farms' abilities to pay.

Ability to Meet Cooperative Farm Credit Terms

The credit terms in Table 9a are: (1) real estate, Federal Land Bank loans of 50 percent of market value, interest at 4½ percent, "Springfield plan"[9] amortization over a 33-year period with two payments per year; (2) livestock and equipment, Production Credit loans of 50 percent market value, interest at 5½ percent, repayment over a five-year period. Table 9a shows that, with $5.00 milk and depreciables at new price, only the largest one-man and three-man farms could meet the repayment terms. With the same milk price and depreciables at one-half new price, the middle size farms also can approximately make the payments. It should be noted that this is the first year payments which, under the Springfield amortization plan, are the highest of any year. With $5.50 milk, as shown in the lower part of Table 9a, a few more sizes are able to meet the repayment schedules.

In Table 9b the representative farms' abilities to pay are compared with the Land Bank regular (constant total) amortization payments rather than the Springfield (diminishing total) amortization payments. This reduces the first year's payments somewhat and puts three more of the sizes in a position to approximately meet the payments at the $5.00 price level and one more at the $5.50 price level. Of course it enables the others to do so with more margin than they had before.

Ability to Meet Bank Terms

The credit terms applied in Table 10 are: (1) real estate loans equal to 70 percent of market value, interest at 5 percent, amortization over a 20-year period with monthly payments; (2) livestock and equipment loans equal to 50 percent of market value, interest at 6 percent, amortization over a five-year period with monthly payments.

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[9] The Springfield plan involves a constant principal payment plus interest on the diminishing balance. Hence, the total payment per period declines with time. The lending terms were obtained from the respective lending agencies in late 1956.

Table 9a. Size and Ability to Meet Credit Terms. Representative Farms (With Cooperative Farm Credit - "Springfield" plan)

	1 man farms			2 man farms			3 man farms		
	16 cows	24 cows	40 cows	24 cows	40 cows	56 cows	40 cows	56 cows	72 cows
	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
WITH MILK $5.00 PER CWT.									
Net cash income minus living allowance	588	2,237	5,615	354	3,794	6,486	1,993	5,266	9,056
Total first year payment on real estate									
a.	1,323	1,644	2,254	1,676	2,254	2,924	2,298	2,924	3,499
b.	780	990	1,396	1,015	1,396	1,852	1,434	1,852	2,224
Total first year payment on livestock and equipment									
a.	1,514	2,022	3,297	1,999	2,954	4,022	2,890	4,000	5,293
b.	1,025	1,405	2,311	1,394	2,140	2,942	2,108	2,931	3,845
Combined first year payments									
a.	2,837	3,666	5,551	3,675	5,208	6,946	5,188	6,924	8,792
b.	1,805	2,396	3,707	2,409	3,536	4,794	3,542	4,783	6,069
Remainder for depreciation and savings									
a.	—2,249	—1,429	64	—3,321	—1,504	—460	—3,195	—1,658	264
b.	—1,217	—159	1,908	—2,045	258	1,692	—1,549	483	2,987
WITH 10% HIGHER PRICES RECEIVED									
Net cash income minus living allowance	1,320	3,340	7,461	1,457	5,820	9,074	3,839	7,854	12,387
Combined first year payments									
a.	2,837	3,666	5,551	3,675	5,208	6,946	5,188	6,924	8,792
b.	1,805	2,396	3,707	2,409	3,536	4,794	3,542	4,783	6,069
Remainder for depreciation and savings									
	—1,517	—326	1,910	—2,218	612	2,128	—1,349	930	3,595
	—485	944	3,754	—952	2,284	4,280	297	3,071	6,318

NOTE: Cases in which repayments could be met, are underlined.

a. Depreciables at new price.
b. Depreciables at ½ new price.

Table 9b. Size and Ability to Meet Credit Terms, Representative Farms (With Cooperative Farm Credit — Regular Amortization Plan)

	1 man farms			2 man farms			3 man farms		
	16 cows	24 cows	40 cows	24 cows	40 cows	56 cows	40 cows	56 cows	72 cows
	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
WITH MILK $5.00 PER CWT.									
Net cash income minus living allowance	588	2,236	5,611	354	3,794	6,486	1,993	5,266	9,056
Total first year payment on real estate									
a.	1,041	1,293	1,773	1,318	1,773	2,300	1,808	2,300	2,753
b.	614	779	1,099	799	1,099	1,457	1,128	1,457	1,750
Total first year payment on livestock and equipment									
a.	1,514	2,022	3,297	1,999	2,954	4,022	2,890	4,000	5,293
b.	1,025	1,406	2,311	1,394	2,140	2,942	2,108	2,931	3,845
Combined first year payments									
a.	2,556	3,315	5,070	3,317	4,727	6,322	4,698	6,300	8,046
b.	1,639	2,185	3,410	2,193	3,239	4,399	3,236	4,388	5,595
Remainder for depreciation and savings									
a.	—1,968	—1,079	541	—2,963	—933	164	—2,705	—1,034	1,010
b.	—1,051	51	2,201	—1,839	555	2,087	—1,243	878	3,461
WITH 10% HIGHER PRICES RECEIVED									
Net cash income minus living allowance	1,320	3,339	7,461	1,457	5,820	9,074	3,839	7,854	12,387
Combined first year payments									
a.	2,556	3,315	5,070	3,317	4,727	6,322	4,698	6,300	8,046
b.	1,639	2,185	3,410	2,193	3,239	4,399	3,236	4,388	5,595
Remainder for depreciation and savings									
a.	—1,236	24	2,391	—1,851	1,093	2,752	—859	1,554	4,341
b.	—319	1,154	4,051	— 737	2,581	4,675	603	3,466	6,792

NOTE: Cases in which repayments could be met, are underlined.

a. Depreciables at new price.
b. Depreciables at ½ new price.

With these terms, $5.00 milk, and depreciables at new price, none can make the payments. With depreciables at one-half new price, the 1-man, 40-cow herd, the 2-man, 56-cow herd, and the 3-man, 72-cow herd can make them. With incomes related to $5.50 milk and with depreciables at new price, the largest of *each* man size can meet the payments. With depreciables at one-half new price, the two larger farms of each man size can make them.

Ability to Meet Farmers' Home Administration Terms

The credit terms applied here are: (1) real estate loans equal to 100 percent of market value, 4½ percent interest, amortization over a 40-year period with twice yearly payments; (2) livestock and equipment loans equal to 100 percent of market value, 5 percent interest, repayment over a 10-year period with constant principal payments annually, plus interest on the diminishing balance. The repayments indicated are for the first (and highest) year.

With milk at $5.00 per cwt. and with depreciables at new price, *none* of the representative farms are able to meet the first year's payments. With depreciables at one-half new price, the largest farms of each group are able to make the payments. With $5.50 milk the largest of each man-size farm is able to meet the payments when depreciables are at new price. When depreciables are at one-half new price, the two larger sizes of each man size can meet the repayment schedule.

There is some problem in applying 10-year repayments for chattels and 40-year repayments for real estate with depreciables at one-half new price. These time periods are close to the depreciation life of machinery and buildings. Hence, if these time periods are applied to half depreciated equipment and buildings, the operator will have to get more than 5 years' use out of the equipment and more than 20 years out of the buildings, or boost his income over the figures used here, lest he use up machinery and buildings before he has paid for them.

At this point it may be worth while to indicate the extent of agreement between Tables 9, 10, and 11, and Table 8 which showed accumulation potential in terms of years needed to retire principal. Table 8 indicated that, with $5.00 milk, only the largest farms of each man size could pay out in a working life time and this with chattels at one-half of new price. Applying Farmers' Home Administration terms as in Table 11, and using the same price and depreciable value assumptions, the same farms *plus* the middle size farms are able to make the payments.[10] Table 8 indicated that, with $5.50 milk and depreciables at new price, again only the largest farm of each man size could accumulate full equity in a working life. Table 11 agrees that exactly the same farms can meet F.H.A. repayments. Table 8 also showed that with depreciables at one-half new price the 40 cow, one-

[10] In Table 8, repayment comes from net farm income minus living allowance; depreciation has been counted as an expense. In Table 11, and others dealing with ability to meet conventional credit terms, repayment comes from net *cash* income minus living allowance; depreciation has not been counted because most repayment terms are shorter than depreciation life, and re-borrowing is common practice.

Table 10. Size and Ability to Meet Credit Terms, Representative Farms (With Bank Credit)

	1 man farms			2 man farms			3 man farms		
	16 cows	24 cows	40 cows	24 cows	40 cows	56 cows	40 cows	56 cows	72 cows
WITH MILK $5.00 PER CWT.	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
Net cash income minus living allowance	588	2,236	5,611	354	3,794	6,486	1,993	5,266	9,056
Total first year payment on real estate									
a.	1,966	2,442	3,347	2,489	3,347	4,342	3,412	4,342	5,196
b.	1,159	1,470	2,074	1,508	2,074	2,751	2,130	2,751	3,303
Total first year payment on livestock and equipment									
a.	1,378	1,840	3,000	1,819	2,688	3,661	2,630	3,641	4,817
b.	932	1,279	2,103	1,269	1,947	2,677	1,918	2,667	3,499
Combined first year payments									
a.	3,344	4,282	6,348	4,308	6,035	8,003	6,042	7,983	10,013
b.	2,092	2,750	4,178	2,777	4,021	5,428	4,049	5,418	6,802
Remainder for depreciation and savings									
a.—	2,756	—2,046	—737	—3,954	—2,241	—1,517	—4,049	—2,717	—957
b.—	1,504	—514	1,433	—2,423	—227	1,058	—2,056	—152	2,254
WITH 10% HIGHER PRICES RECEIVED									
Net cash income minus living allowance	1,320	3,340	7,461	1,457	5,820	9,074	3,839	7,854	12,387
Combined first year payments									
a.	3,344	4,282	6,348	4,308	6,035	8,003	6,042	7,983	10,013
b.	2,092	2,750	4,178	2,777	4,021	5,428	4,049	5,418	6,802
Remainder for Depreciation and savings									
a.—	2,024	—942	—1,113	—2,851	—215	1,069	—2,203	—129	2,374
b.—	772	590	3,283	—1,320	1,799	3,646	—210	2,436	5,585

NOTE: Cases in which repayments could be met are underlined.

a. Depreciables at new prices.

b. Depreciables at ½ new price.

man farm and the two larger two- and three-man farms could accumulate full equity in a working life. Table 11 agrees that these could meet F.H.A. terms. In short, repayment performance under F.H.A. terms is in approximate agreement with the basic equity accumulation potential of the representative farms.

A comparison of Tables 10 and 11 shows that the same farms are able to meet F.H.A. payments on 100 percent loans as are able to meet bank payments on 70 percent real estate and 50 percent chattel loans. There is more margin above payments in meeting the bank terms, however.

SIZE AND THE BEGINNER'S EQUITY PROBLEM

It was shown in Table 8 that equity accumulation potential is definitely related to size and total capital. The potential was expressed in relation to *total* capital. This is about the equivalent of an examination of ability to repay assuming 100 percent credit. The Farmers' Home Administration terms used in Table 11 did include 100 percent credit. However, for the most part, the terms available to farmers seeking credit include substantial equity requirements.

In practice, Cooperative Farm Credit in the Northeast tends to loan on a complete farm set-up a maximum of 50 percent of market value of real estate, livestock, and equipment. In practice, New Hampshire banks tend to loan on a complete farm set-up a maximum of 70 percent of real estate and 50 percent of livestock and equipment.

Before examining specific data it should be evident in general terms that the prospective farmer without special aid faces something of a dilemma in how to accumulate capital. Large size and large total capital are necessary to have any capital accumulation potential or debt repayment ability. But the larger the size aspired to, the larger the absolute beginning equity required by most creditors.

The research questions here are, how much capital must the beginner have before the remainder can be borrowed and what are the prospects of obtaining it. The former can be shown with little difficulty and is presented for the representative farms in the first two lines of Tables 12 and 13. The amounts are truly substantial—running from over $14,000 to over $67,000 to meet Cooperative Farm Credit requirements and from over $10,000 to over $48,000 to meet bank requirements.

The second question is more difficult. The answer here is framed in these terms: (1) *Annual* savings necessary to accumulate the required equity in 10 and 20 years with depreciables at new and at one-half of new price are calculated. These are shown in lines three to six of Tables 12 and 13. (2) Potential annual savings of farm workers and of tenant operators are shown in lines seven to nine. Whenever a "potential annual savings" figure exceeds an "annual savings needed" figure in the same column, the equity accumulation is possible for the conditions specified.

The Hired Man's Accumulation Potential

The hired man is assumed to receive $2,400 income and to have living expenses of $1,800 plus $40 per month house rent. Except for the house rent, these figures are those used in earlier computations with the representative farms. The farm workers' annual saving potential then is only

Table 11. Size and Ability to Meet Credit Terms, Representative Farms (With Farmers' Home Administration Credit)

	1 man farms			2 man farms			3 man farms		
	16 cows	24 cows	40 cows	24 cows	40 cows	56 cows	40 cows	56 cows	72 cows
	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
WITH MILK $5.00 PER CWT.									
Net cash income minus living allowance	588	2,237	5,615	354	3,794	6,486	1,993	5,266	9,056
Total first year payment on real estate									
a.	1,927	2,393	3,281	2,440	3,281	4,256	3,345	4,256	5,093
b.	1,136	1,441	2,033	1,478	2,033	2,696	2,088	2,696	3,237
Total first year payment on livestock and equipment									
a.	1,782	2,379	3,879	2,352	3,475	4,732	3,400	4,707	6,228
b.	1,206	1,654	2,719	1,641	2,517	3,461	2,480	3,448	4,524
Combined first year payments									
a.	3,709	4,772	7,160	4,792	6,756	8,989	6,745	8,963	11,321
b.	2,342	3,095	4,752	3,119	4,550	6,157	4,568	6,144	7,761
Remainder for depreciation and savings									
a.	—3,121	—2,535	—1,545	—4,438	—2,962	—2,503	—4,752	—3,697	—2,265
b.	—1,754	—858	863	—2,765	—756	329	—2,575	—878	1,295
WITH 10% HIGHER PRICES RECEIVED									
Net cash income minus living allowance	1,320	3,340	7,461	1,457	5,820	9,074	3,839	7,854	12,387
Combined first year payments									
a.	3,709	4,772	7,160	4,792	6,756	8,989	6,745	8,963	11,321
b.	2,342	3,095	4,752	3,119	4,550	6,157	4,568	6,144	7,761
Remainder for depreciation and savings									
a.	—2,389	—1,432	301	—3,335	—936	85	—2,906	—1,109	1,066
b.	—1,022	245	2,709	—1,662	1,270	2,917	—729	1,710	4,626

NOTE: Cases in which repayments could be met are underlined.

a. Depreciables at new price.

b. Depreciables at ½ new price.

$120, which is insufficient to accumulate the equity for even the smallest farm. If his house were furnished, and the above wage retained, he could almost reach the bank equity for the one-man, 24-cow farm in 20 years.

The Tenant Operator's Accumulation Potential

To get some indication of the potential annual savings of tenant operators, some assumptions have to be made. The assumptions used are: (1) the farms "rented" are the representative farms dealt with so far, (2) the tenants are substantially without capital, so the farm owner furnishes real estate, livestock, and equipment, (3) the lease arrangement used is the New Hampshire stock share lease.[11] The unshared contributions of each party are added up. Then other expenses and income are divided in the same proportion. Appendix Tables IV-A, B, C, D, E, F, G, H, I show the division of expenses and income under this arrangement for each representative farm.[12]

Table 12 shows the annual saving needed to accumulate 50 percent in 10 years and in 20 years. It also shows potential tenant operator savings with milk at $5.00 and with 10 percent higher prices. Again, whenever a "potential annual saving" figure exceeds an "annual savings needed" figure in the same farm size column, the equity accumulation is possible under the conditions specified to the left of each line of figures.

1. Accumulation of 50 Percent Equity in 10 Years

A comparison in this manner shows that a 50 percent equity (as commonly required by Cooperative Farm Credit) can be accumulated by a tenant operator in 10 years only with the 3-man, 72-cow farm, with depreciables at one-half new price and with $5.50 milk.

2. Accumulation of 50 Percent Equity in 20 Years

In 20 years, $5.50 milk permits a 50 percent equity for tenant operators of the 1-man, 40-cow, 2-man, 40- and 56-cow, 3-man, 40-, 56-, and 70-cow farms, if they start with depreciables at 50 percent of new. With the same milk price and depreciables at new value, only the 2-man, 40- and 56-cow and 3-man, 56- and 70-cow farms have the necessary saving potential. With $5.00 milk, tenant operators of the 2-man, 56-cow and 3-man, 56- and 72-cow farms have the necessary saving potential, if they start with depreciables at 50 percent of new. Starting with all depreciables at new price, only the 3-man, 72-cow farm has the necessary saving potential.

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[11] *Farm Leases*, H. C. Woodworth, Cooperative Extension Service, University of New Hampshire, Nov. 1950, AEL-4-350.

[12] Examination of these tables raises some questions as to the suitability of this formula for the full range of labor forces and herd sizes studied here. A large amount of labor relative to herd size, as with the 2-man, 24-cow, and 3-man, 40-cow farms, weights the income division heavily against the landlord. The 2-man, 40-cow and 3-man, 56-cow farms are on the borderline in that respect. For the purpose of the present study this means that the saving potentials of the tenant operators of these farms as shown in Tables 14a and 14b probably are on the high side of what could be expected under long-run competitive conditions. On the other hand, the tenant-operator of the 1-man, 40-cow farm might well receive a *larger* part of net cash income than this formula gives him.

Table 12. Size and Beginner's Equity, Representative Farms

	1 man farms			2 man farms			3 man farms		
	16 cows	24 cows	40 cows	24 cows	40 cows	56 cows	40 cows	56 cows	72 cows
	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
WITH 50% EQUITY REQUIRED									
Amount to be saved:									
a.	23,675	29,957	43,122	30,292	41,777	54,945	42,115	54,860	67,628
b.	14,505	18,782	27,775	19,075	27,102	36,352	27,480	36,310	44,873
Annual savings needed to equal 50% of capital, with 3% int. compounded annually									
In 10 years									
a.	2,065	2,613	3,761	2,642	3,644	4,792	3,673	4,785	5,899
b.	1,265	1,638	2,422	1,663	2,364	3,171	2,397	3,167	3,914
In 20 years									
a.	881	1,114	1,604	1,127	1,554	2,044	1,567	2,041	2,516
b.	539	698	1,033	709	1,008	1,352	1,022	1,351	1,669
Potential annual saving of farm worker[1]	120	120	120	120	120	120	120	120	120
Potential annual saving of "tenant" operator[2]									
With milk $5.00 cwt.	—678	—64	869	—615	914	1,846	324	1,592	2,977
With 10% higher prices received	—334	410	1,534	—9	1,781	2,985	1,357	2,386	4,442

[1] Assuming $2400 income; $1800 living allowance plus $480 house rent.
[2] From tables of landlord-tenant division of expenses and income.

NOTE: Double line indicates that sufficient equity can be achieved by "tenant" operator with *either* price for milk. Single line indicates it is achieved only with the *higher* price for milk.

a. Depreciables at new price.
b. Depreciables at ½ new price.

Table 13 shows similar data relative to accumulating 30 percent of real estate and 50 percent of equipment and livestock value (as commonly required by New Hampshire banks). Both the number of farm sizes and the number of price and time conditions under which tenant operators have the necessary saving potential are increased as compared to the situation where 50 percent of the value of total capital is required.

3. Accumulation of 30-50 Percent Equity in 10 Years

An equity of 30 percent of real estate and 50 percent of livestock and machinery in 10 years is equalled only by the saving of a tenant operator of the 3-man, 72-cow farm with $5.50 milk, if depreciables are new. If depreciables are at 50 percent of new price, the 2-man, 40- and 56-cow farms and the 3-man, 56- and 72-cow farms can qualify with $5.50 milk. If the price of milk is $5.00, the only farm to qualify in 10 years is the 3-man, 72-cow unit and that only with depreciables at one-half of new value.

4. Accumulation of 30-50 Percent Equity in 20 Years

With $5.50 milk the 1-man, 40-cow, 2-man, 40- and 56-cow, and 3-man, 40-, 56-, and 72-cow farms can qualify in 20 years with depreciables at either 50 or 100 percent of new value. If milk is at $5.00 and depreciables at new value, only the 2-man, 56-cow, and 3-man, 56- and 72-cow farms have the necessary saving potential. With the same milk prices and depreciables at one-half new value, the 1-man, 40-cow, 2-man, 40- and 56-cow, and 3-man, 56- and 72-cow farms all have the needed saving potential.

5. Summary of Tenant Operator's Accumulation Potentials

The hired man does not have an accumulation potential for any size farm in 10 or 20 years under our assumed conditions. The picture for tenant operators varies greatly with the various combinations of equity requirements, milk prices, and age of depreciables. At one extreme, *only* the tenant operator of the 3-man, 72-cow farm with $5.50 milk could save a 50 percent equity with depreciables at one-half new price in *10 years*. At another extreme, tenant operators of the 1-man, 40-cow, 2-man, 40- and 56-cow, and 3-man, 56- and 72-cow farms had saving potentials to accumulate 30 percent of real estate and 50 percent of livestock and equipment values in *20 years* with $5.00 milk, if depreciables were 50 percent of new value. It may, of course, be questioned whether young men would choose to become tenant operators in order to become farm owners if this involves 20 years of very rigorous saving plus price and tenure uncertainty. Moreover, in practice, renting has not been a common form of tenure in New England; hence it has offered relatively few opportunities as a way of farm operation and equity accumulation.

Conclusions for Individual and Institutional Action

In normal price and efficiency situations, farmers can acquire full ownership out of earnings only if they operate the larger size farms. They can earn the necessary equity for conventional credit (to get started as mortgaged owners) only if they have the use of the larger size farms. This requires either: (1) an expansion of suitable renting arrangements, or (2) an expansion of practically 100 percent credit.

Table 13. Size and Beginner's Equity, Representative Farms

		1 man farms			2 man farms			3 man farms		
		16 cows	24 cows	40 cows	24 cows	40 cows	56 cows	40 cows	56 cows	72 cows
		Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars	Dollars
WITH REQUIRED EQUITIES OF 30% OF REAL ESTATE AND 50% OF LIVESTOCK AND EQUIPMENT										
Amount to be saved										
	a.	16,581	21,146	31,048	21,311	29,700	39,277	29,803	39,192	48,880
	b.	10,296	13,475	20,291	13,633	19,618	26,426	19,795	26,384	32,955
Annual saving needed to equal 30% of real estate and 50% of livestock and equipment with 3% interest compounded annually										
In 10 years	a.	1,446	1,844	2,708	1,858	2,590	3,426	2,599	3,418	4,263
	b.	898	1,175	1,769	1,189	1,711	2,305	1,726	2,301	2,874
In 20 years										
	a.	617	786	1,155	793	1,105	1,461	1,109	1,458	1,819
	b.	383	501	755	507	730	983	736	981	1,226
Potential annual saving of farm workers[1]		120	120	120	120	120	120	120	120	120
Potential annual saving of "tenant" operator[2]										
With milk $5.00 cwt.		—678	—64	869	—615	914	1,846	324	1,592	2,977
With 10% higher prices received		—334	410	1,534	—9	1,781	2,985	1,357	2,386	4,442

[1] Assuming $2,400. income; $1,800. living allowance plus $480. house rent.
[2] From tables of landlord-tenant division of expenses and income.

NOTE: Double line indicates that sufficient equity can be achieved by "tenant" operator with *either* price for milk. Single line indicates it is achieved only with the *higher* price for milk.

a. Depreciables at new price.
b. Depreciables at ½ new price.

Chapter V. How Operators Obtained Capital

THE focus of this study is on obtaining farming capital in the present and future. However, the experience of farmers in getting established and in developing their operations may be brought to bear on problems of the present.[13] It is of interest to determine how the present operators get established, how they obtained subsequent capital, whether the operators of the large farms obtained their capital in ways different from the operators of the small farms, and whether the younger operators obtained their capital in different ways from the older operators.

Educational and occupational histories were obtained from the survey farms plus the date, kind and size of beginning farm operations, the sources of beginning capital, the principal additions and changes of capital, and current debts.

The cases were sorted into four size of herd groups. Within size groups, it was possible to examine how operators got their initial capital, to observe how this differed with date of start, and also to observe the complete employment and capital accumulation record of each operator.

The four size groups used here were: (1) large — 39 or more animal units; (2) large medium — 29 to 39 animal units; (3) small medium — 20 to 28 animal units; and (4) small — 19 and under animal units. The experiences of all four size groups were examined. Within the large and the small groups there were some rather distinct uniformities and between these groups there were some distinct differences. The large medium and small groups represented rather definite gradations in capital accumulation experience between the two extreme sizes, but their experiences were less uniform. Hence the following description and analysis is devoted mostly to the Large and Small size groups.

Present operators of the large farms got established as operators early in life — after a relatively short period on the home farm. The most common major sources of starting capital were inheritance and family assistance.[14] For a smaller number of cases, credit was the major means. At least three "patterns" were evident among these latter cases: (1) some of the older operators had bought their farms largely on credit but apparently had been able to save rapidly enough to change equipment and expand herds with the times, (2) some operators around 50 years of age had used credit rather heavily to acquire successively larger farms, herds, and equipment, (3) some younger operators used credit very boldly or used large amounts of credit plus rather unusual supplementary capital sources.

Credit was the most important source of growth capital for most of the present large operators. Other sources were more important in some cases, and there were supplementary sources in most cases. Most of the younger operators still had significant debts.

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[13] We do not, of course, have the histories of those who failed to get established or who for various reasons left farming in the areas studied.

[14] Family assistance includes such things as father-son partnerships, renting or buying the home farm on favorable terms, backing for credit, use of father's equipment, and other means by which family capital enables one to secure farming capital more readily.

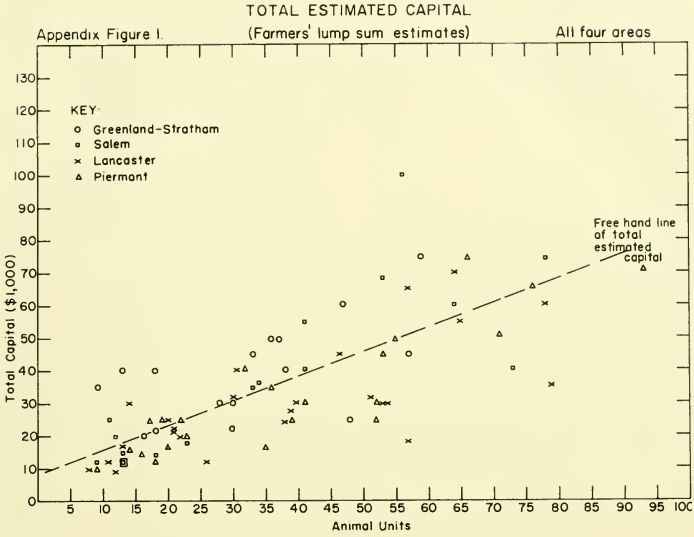
A striking feature of the large farms was the presence of two or more family members as full-time workers or operators. The most frequent form was father and son. One might reason that this was usually a more successful operating combination than one operator plus hired help. There was also considerable indication that more than one generation was needed to accumulate or develop the capital represented by an economically effective farm of the fairly large size.

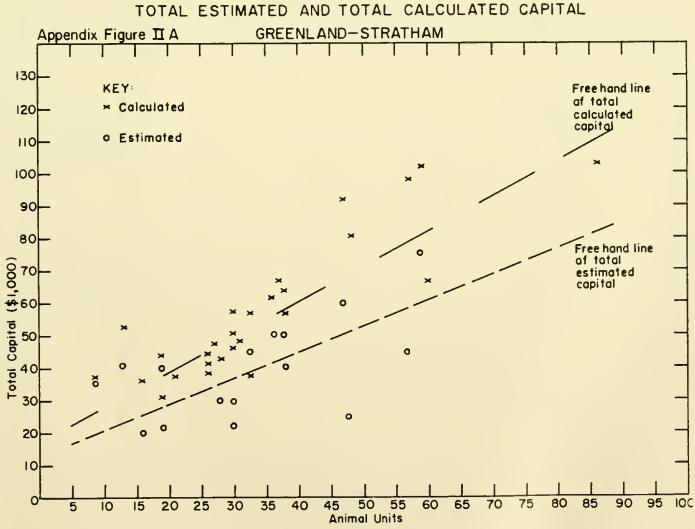
In contrast, operators of small farms got started as operators rather late, after long non-farm work periods. They had received little assistance. Many started on small or otherwise inadequate places. Saving received greater emphasis than credit as a source of growth capital. They frequently expressed reluctance to use more than very moderate amounts of credit. They frequently had some income from other work.

Operators of the large medium and small medium size groups had varied capital accumulation experience but on the whole represented rather definite gradations between the large and small size groups. Many were aware that they needed more physical capital, and there were rather numerous instances of misfortune. This suggests that they might readily use more credit to improve their positions.

Chapters III and IV showed that farmers could not pay for farms out of their earnings unless they, through renting or 100 percent credit, had the *use of* the capital of large farms. Farmer experience bears this out and shows that, for most farmers, personal saving and cautious use of credit have resulted in ownership of only small farms. For the most part these have *failed* to secure ownership of what we call "efficient" size farms. The reasons for this failure are evident in Chapters III and IV and the solution might well be either an expansion of suitable renting arrangements, or an expansion of practically 100 percent credit, or both.

Appendix

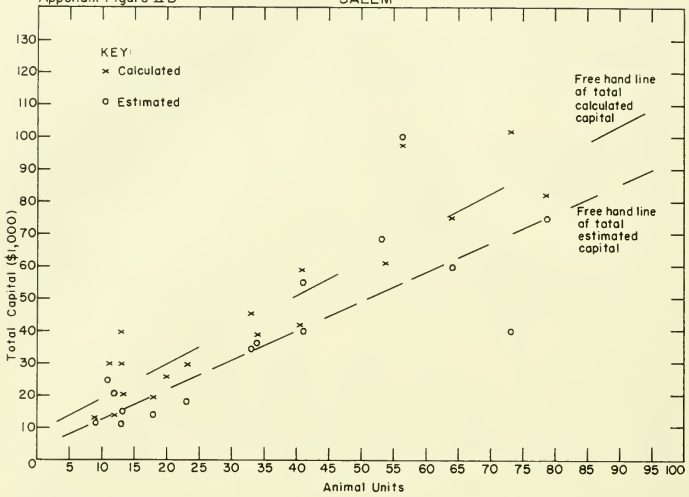

TOTAL ESTIMATED CAPITAL
Appendix Figure I.
(Farmers' lump sum estimates)
All four areas
KEY:
Greenland-Stratham
Salem
Lancaster
Piermont
Free hand line of total estimated capital
Total Capital ($1,000)
Animal Units


TOTAL ESTIMATED AND TOTAL CALCULATED CAPITAL
Appendix Figure II A
GREENLAND-STRATHAM
KEY:
Calculated
Estimated
Free hand line of total calculated capital
Free hand line of total estimated capital
Total Capital ($1,000)
Animal Units

TOTAL ESTIMATED AND TOTAL CALCULATED CAPITAL

Appendix Figure II B

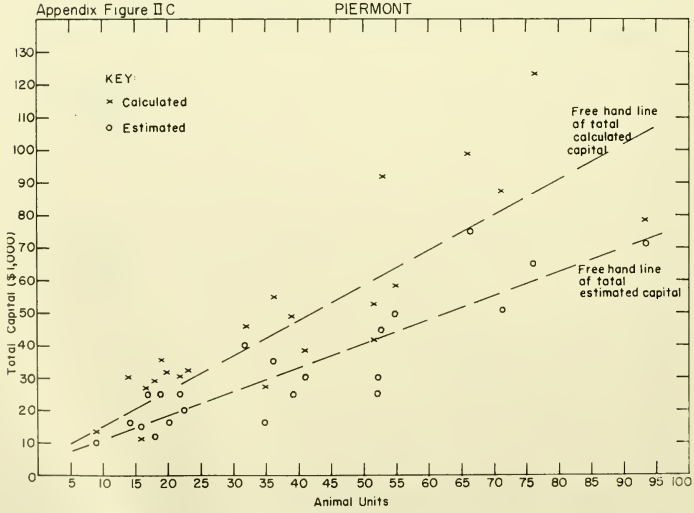
SALEM



TOTAL ESTIMATED AND TOTAL CALCULATED CAPITAL

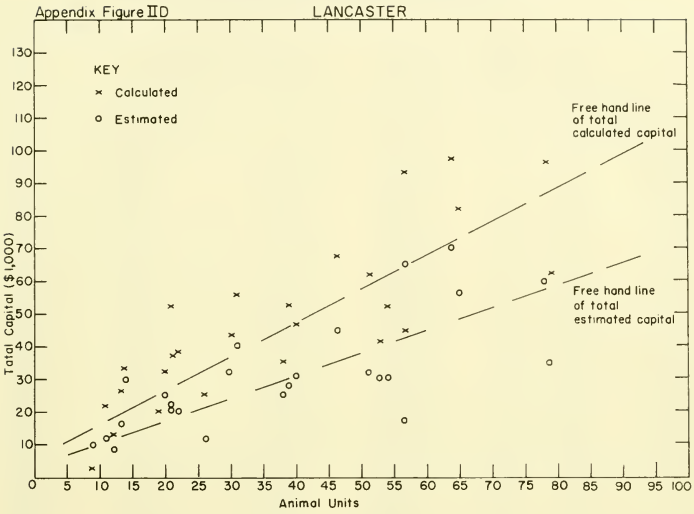
Appendix Figure II C

PIERMONT



TOTAL ESTIMATED AND TOTAL CALCULATED CAPITAL

Appendix Figure IID LANCASTER


KEY
× Calculated
o Estimated
Free hand line of total calculated capital
Free hand line of total estimated capital
Total Capital ($1,000)
Animal Units
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100
10 20 30 40 50 60 70 80 90 100 110 120 130

Appendix Table I A. Herd Size and Farm Capital
Towns of Greenland and Stratham

Case No.	Cows	Total Animal Units	Value of Real Estate	Value of Machinery and Equipment	Value of Livestock	Total Capital
	Number	Number	Dollars	Dollars	Dollars	Dollars
1	5	9	27,850	6,050	1,915	35,815
2	10	13	44,810	3,445	4,250	52,505
3	14	16	28,500	3,070	3,800	35,370
4	15	18	34,425	4,010	5,250	43,685
5	11	18	25,900	1,520	3,680	31,100
6	15	21	28,520	2,940	5,850	37,310
7	19	26	25,640	4,275	9,210	39,126
8	16	26	27,180	4,905	9,040	41,125
9	16	26	30,515	8,180	7,100	45,795
10	20	27	28,700	8,300	8,100	45,100
11	23	28	27,350	4,690	10,190	42,230
12	22	30	33,525	3,815	8,500	45,840
13	22	30	44,350	5,160	7,700	57,210
14	22	30	29,525	8,095	11,625	49,245
15	25	31	31,025	6,105	10,000	47,130
16	28	33	21,525	5,245	9,750	36,520
17	26	33	33,300	10,720	12,580	56,600
18	28	36	37,675	10,370	13,150	61,190
19	20	37	43,775	11,540	11,775	67,090
20	26	38	33,400	9,675	13,400	56,475
21	30	38	41,090	10,905	11,430	63,425
22	35	47	64,770	10,855	16,150	91,775
23	30	48	53,850	14,660	11,790	80,300
24	46	57	74,450	6,530	17,325	98,305
25	38	59	71,500	12,835	17,420	101,755
26	46	60	45,125	12,625	9,200	66,950
27	72	86	59,825	15,250	28,725	103,800

Appendix Table I B. Herd Size and Farm Capital
Town of Salem

Case No.	Cows	Total Animal Units	Value of Real Estate	Value of Machinery and Equipment	Value of Livestock	Total Capital
	Number	Number	Dollars	Dollars	Dollars	Dollars
1	8	9	9,225	1,545	2,175	12,945
2	9	11	24,950	2,060	2,700	29,710
3	10	12	10,500	335	2,210	13,045
4	11	13	34,875	770	3,900	39,545
5	11	13	23,870	2,790	2,500	29,160
6	11	13	15,200	1,585	3,435	20,220
7	13	18	8,925	4,780	5,970	19,675
8	19	20	12,175	5,400	7,125	24,700
9	17	23	21,375	2,165	5,625	29,165
10	28	33	31,800	4,390	9,150	45,340
11	25	34	19,900	7,325	10,950	38,175
12	39	41	22,580	8,620	10,000	41,140
13	30	41	30,800	13,755	13,950	58,505
14	46	53	28,500	7,910	16,100	52,510
15	40	56	50,650	14,540	32,500	97,690
16	52	64	35,400	10,930	18,120	64,450
17	54	73	69,400	11,465	20,570	101,435
18	50	78	35,760	14,615	26,375	76,750

Appendix Table I C. Herd Size and Farm Capital
Town of Piermont

Case No.	Cows	Total Animal Units	Value of Real Estate	Value of Machinery and Equipment	Value of Livestock	Total Capital
	Number	Number	Dollars	Dollars	Dollars	Dollars
1	7	9	8,320	3,185	2,190	13,695
2	11	14	23,450	2,035	4,600	30,085
3	11	16	9,350	370	2,425	12,145
4	12	17	20,175	985	5,675	26,835
5	13	18	21,725	2,310	5,150	29,185
6	12	19	22,670	3,400	9,650	35,720
7	16	20	23,800	1,145	6,600	31,545
8	16	22	20,075	3,770	6,325	30,170
9	15	23	25,375	1,075	6,130	32,580
10	23	32	26,150	11,280	9,350	46,780
11	26	35	13,225	3,785	9,820	26,830
12	24	36	40,725	4,960	9,115	54,800
13	28	39	34,720	4,185	9,500	48,405
14	21	41	23,225	4,475	11,200	38,900
15	40	52	21,200	6,480	14,925	42,605
16	34	52	35,700	4,620	12,965	53,285
17	32	53	63,150	10,160	18,500	91,810
18	37	55	40,000	5,900	13,275	59,175
19	40	66	58,900	13,650	26,250	98,800
20	49	71	53,650	8,850	25,100	87,600
21	55	76	74,150	15,340	34,570	124,060
22	70	93	61,800	11,875	35,880	109,555

Appendix Table 1 D. Herd Size and Farm Capital
Town of Lancaster

Case No.	Cows	Total Animal Units	Value of Real Estate	Value of Machinery and Equipment	Value of Livestock	Total Capital
	Number	Number	Dollars	Dollars	Dollars	Dollars
1	6	8	24,950	930	2,815	28,695
2	7	11	18,175	1,495	3,130	22,800
3	9	12	7,130	3,850	2,450	13,430
4	9	13	22,200	1,120	3,600	26,920
5	6	14	25,365	2,520	4,715	32,600
6	13	16	9,675	—	4,380	14,055
7	9	18	13,375	2,870	3,300	19,545
8	14	20	24,100	4,850	3,675	32,625
9	14	21	43,200	2,495	6,410	52,105
10	14	21	26,700	4,880	6,025	37,605
11	12	22	26,050	7,140	5,300	38,490
12	18	26	14,305	4,810	6,480	25,595
13	21	30	21,575	13,365	8,465	43,405
14	21	31	36,430	10,940	7,750	55,120
15	28	38	21,800	4,975	8,360	35,135
16	25	39	42,500	1,590	8,550	52,640
17	27	40	26,850	7,035	12,200	46,085
18	29	46	40,600	14,040	13,055	67,695
19	27	51	25,875	20,915	15,140	61,930
20	40	53	24,450	1,855	13,900	40,205
21	32	54	29,350	4,400	18,290	52,040
22	38	57	65,410	11,380	16,040	92,830
23	35	57	25,275	4,705	15,075	45,055
24	40	64	74,900	8,600	13,135	96,635
25	42	65	51,425	12,695	19,125	83,245
26	50	78	44,650	16,945	23,690	85,285
27	40	79	36,675	4,705	20,725	62,105

Appendix Table II A. Dairy Farm Capital, Representative Farm
16 cows, 1+ man

Item	Number, description, size	New value	Average year value	Item	Number, description, size	New value	Average year value
LAND		Dollars	Dollars	MACHINERY		Dollars	Dollars
Tillable	42.1A	4,210	4,210	Auto	½ to farm	1,000	500
Perm. past.	25. A	1,000	1,000	Truck	1 1½ T	2,000	1,000
Other, woods	67.1A	1,010	1,010	Tractor	1 Med.	2,000	1,000
Building and lane space	1.5A	150	150	Gutter cleaner Milking machines	2	380	190
	135.7A	6,370	6,370	Wagons Plows	1 2-14″	220	110
BUILDINGS				Harrow, disk	1 7′	250	125
House	1	12,000	6,000	Harrow, springtooth	1 10′	140	70
Barn	1 gambrel 34 x 52	14,200	7,100	Corn planter Grass seeder	Hired		
Silo				Cultivator			
Machine sheds	1	1,000	500	Mower	1 7′	300	150
Fence		900	500	Rake, side del.	1 9′	320	160
Well	1	1,000	500	Hayloader	1	380	190
		29,100	14,600	Baler Field chopper Blower Manure loader			
LIVESTOCK							
Cows	16	3,200	3,200	Manure spreader	1 40 bu.	310	155
Youngstock	10	1,000	1,000	Lime and fert. spreader	1 broadcast	50	25
		4,200	4,200	Electric motors	3	180	90
				Misc. tools		150	75
						7,680	3,840
					Total	47,350	29,010

Appendix Table II B. Dairy Farm Capital, Representative Farm
24 cows, 1+ man

Item	Number, description, size	New value	Average year value	Item	Number, description, size	New value	Average year value
LAND		Dollars	Dollars	MACHINERY		Dollars	Dollars
Tillable	58.7A	5,870	5,870	Auto	½ to farm	1,000	500
Perm. past.	37.5A	1,500	1,500	Truck	1 1½ T.	2,000	1,000
Other, woods	96.2A	1,445	1,445	Tractor	1 Med.	2,000	1,000
Building and lane space	2.0A	200	200	Gutter cleaner			
				Milking machines	2	400	200
		9,015	9,015	Wagons	1 2 T.	300	150
BUILDINGS				Plows	1 2-14″	220	110
House	1	12,000	6,000	Harrow, disk	1 7′	250	125
Barn	1 gable 34 x 80	17,400	8,700	Harrow, springtooth	1 10′	140	70
Silo	1 wood 14 x 28	2,000	1,000	Corn planter	Hired		
Machine sheds	1	1,300	650	Grass seeder	Hired		
Fence		1,140	570	Cultivator	1 2-row	230	115
Well	1	1,200	600	Mower	1 7′	300	150
				Rake, side del.	1 9′	320	160
		35,040	17,520	Baler	1 P.T.O.	1,500	750
LIVESTOCK				Field chopper	Hired		
Cows	24	4,800	4,800	Blower	Hired		
Youngstock	14	1,400	1,400	Manure loader			
				Manure spreader	1 40-bu.	310	155
		6,200	6,200	Lime and fert. spreader	1 8′	250	125
				Electric motors	4	240	120
				Misc. tools		200	100
						9,660	4,830
					Total	59,915	37,565

Appendix Table II C. Dairy Farm Capital, Representative Farm 40 cows, 1+ man

Item	Number, description, size	New value	Average year value
LAND		Dollars	Dollars
Tillable	93.4A	9,340	9,340
Perm. past.	62.0A	2,480	2,480
Other, woods	155.4A	2,330	2,330
Building and lane space	3 A	300	300
		14,450	14,450
BUILDINGS			
House	1	12,000	6,000
Barn	1 gable 34 x 130	26,400	13,200
Silo	1 wood 16 x 36	3,000	1,500
Machine sheds	1	1,500	750
Fence		1,435	720
Well	1	1,600	800
		45,935	22,970
LIVESTOCK			
Cows	40	8,000	8,000
Youngstock	24	2,400	2,400
		10,400	10,400

Item	Number, description, size	New value	Average year value
MACHINERY		Dollars	Dollars
Auto	½ to farm	1,000	500
Truck	1 1½ T.	2,000	1,000
Tractor	2 Med.	4,000	2,000
Gutter cleaner	1	1,800	900
Milking machines	4	780	390
Wagons	1 2 T.	300	150
Plows	2 2-14"	440	220
Harrow, disk	1 7'	250	125
Harrow, springtooth	1 10'	140	70
Corn planter	1 2-row	220	110
Grass seeder	1 8'	500	250
Cultivator	1 2-row	230	115
Mower	1 7'	300	150
Rake, side del.	1 9'	450	225
Baler	1 P.T.O.	1,500	750
Field chopper	Hired		
Blower	Hired		
Manure loader	1	320	160
Manure spreader	1 60-bu.	430	215
Lime and fert. spreader	1 8'	250	125
Electric motors	5	300	150
Misc. tools		250	125
		15,460	7,730
	Total	86,245	55,550

Appendix Table II D. Dairy Farm Capital, Representative Farm
24 cows, 2+ men

Item	Number, description, size	New value	Average year value
LAND		Dollars	Dollars
Tillable	63.1A	6,310	6,310
Perm. past.	37.5A	1,500	1,500
Other, woods	100.6A	1,510	1,510
Building and lane space	2.0A	200	200
		9,520	9,520
BUILDINGS			
House	1	12,000	6,000
Barn	1 gambrel 34 x 80	19,800	9,900
Silo			
Machine sheds	1	1,300	650
Fence		1,085	540
Well	1	1,200	600
		35,385	17,690
LIVESTOCK			
Cows	24	4,800	4,800
Youngstock	14	1,400	1,400
		6,200	6,200

Item	Number, description, size	New value	Average year value
MACHINERY		Dollars	Dollars
Auto	½ to farm	1,000	500
Truck	1 1½ T.	2,000	1,000
Tractor	1 Med.	2,000	1,000
Gutter cleaner			
Milking machines	2	400	200
Wagons	1 2 T.	300	150
Plows	1 2-14″	220	110
Harrow, disk	1 7′	250	125
Harrow, springtooth	1 10′	140	70
Corn planter			
Grass seeder	Hired		
Cultivator			
Mower	1 7′	300	150
Rake, side del.	1 9′	320	160
Baler	1 P.T.O.	1,500	750
Field chopper			
Blower			
Manure loader			
Manure spreader	1 40-bu.	310	155
Lime and fert. spreader	1 8′	250	125
Electric motors	4	240	120
Misc. tools		250	125
		9,480	4,740
	Total	60,585	38,150

Appendix Table H E. Dairy Farm Capital, Representative Farm
40 cows, 2+ men

Item	Number, description, size	New value	Average year value
LAND		Dollars	Dollars
Tillable	93.4A	9,340	9,340
Perm. past.	62.0A	2,480	2,480
Other, woods	155.4A	2,330	2,330
Building and lane space	3.0A	300	300
		14,450	14,450
BUILDINGS			
House	1	12,000	6,000
Barn	1 gable 34' x 130'	26,400	13,200
Silo	1 wood 16' x 36'	3,000	1,500
Machine sheds	1	1,500	750
Fence		1,435	720
Well	1	1,600	800
		45,935	22,970
LIVESTOCK			
Cows	40	8,000	8,000
Youngstock	24	2,400	2,400
		10,400	10,400

Item	Number, description, size	New value	Average year value
MACHINERY		Dollars	Dollars
Auto	½ to farm	1,000	500
Truck	1 1½ T.	2,000	1,000
Tractor	2 Med.	4,000	2,000
Gutter cleaner			
Milking machines	4	780	390
Wagons	1 2 T.	300	150
Plows	1 2-14"	220	110
Harrow, disk	1 7'	250	125
Harrow, springtooth	1 10'	140	70
Corn planter	Hired		
Grass seeder	Hired		
Cultivator	1 2-row	230	115
Mower	1 7'	300	150
Rake, side del.	1 9'	450	225
Baler	1 P.T.O.	1,500	750
Field chopper	Hired		
Blower	Hired		
Manure loader	1	320	160
Manure spreader	1 60-bu.	430	215
Lime and fert. spreader	1 8	250	125
Electric motors	5	300	150
Misc. tools		300	150
		12,770	6,385
	Total	83,555	54,205

Appendix Table II F. Dairy Farm Capital, Representative Farm
56 cows, 2+ men

Item	Number, description, size	New value	Average year value
LAND		Dollars	Dollars
Tillable	136.8A	13,680	13,680
Perm. past.	87.0A	3,480	3,480
Other, woods	223.8A	3,360	3,360
Building and lane space	4 A	400	400
		20,920	20,920
BUILDINGS			
House	1	12,000	6,000
Barn	1 gable 34' x 185'	36,300	18,150
Silo	1 wood 18' x 38'	3,900	1,950
Machine sheds	1	1,500	750
Fence		1,720	860
Well	1	2,000	1,000
		57,420	28,710
LIVESTOCK			
Cows	56	11,200	11,200
Youngstock	34	3,400	3,400
		14,600	14,600

Item	Number, description, size	New value	Average year value
MACHINERY		Dollars	Dollars
Auto	½ to farm	1,000	500
Truck	1 1½ T.	2,000	1,000
Tractor	2 Med.	4,000	2,000
Gutter cleaner	1	2,220	1,100
Milking machines	4	810	405
Wagons	1 2 T.	300	150
Plows	2 2-14"	440	220
Harrow, disk	1 7'	250	125
Harrow, springtooth	1 10'	140	70
Corn planter	1 2-row	220	110
Grass seeder	1 8'	500	250
Cultivator	1 2-row	230	115
Mower	1 7'	300	150
Rake, side del.	1 9'	450	225
Baler	1 Engine driven	2,400	1,200
Field chopper	Hired		
Blower	Hired		
Manure loader	1	320	160
Manure spreader	1 60-bu.	430	215
Lime and fert. spreader	1 8'	250	125
Electric motors	6	360	180
Misc. tools		350	175
		16,950	8,475
	Total	109,890	73,705

Appendix Table II G. Dairy Farm Capital, Representative Farm 40 cows, 3 men

Item	Number, description, size	New value	Average year value
LAND		Dollars	Dollars
Tillable	100.7A	10,070	10,070
Perm. past.	620.0A	2,480	2,480
Other, woods	162.7A	2,440	2,440
Building and lane space	3.0A	300	300
		15,290	15,290
BUILDINGS			
House	1	12,000	6,000
Barn	1 gambrel 34 x 130	29,800	14,900
Silo			
Machine sheds	1	1,500	750
Fence		1,370	685
Well	1	1,600	800
		46,270	23,135
LIVESTOCK			
Cows	40	8,000	8,000
Youngstock	24	2,400	2,400
		10,400	10,400

Item	Number, description, size	New value	Average year value
MACHINERY		Dollars	Dollars
Auto	½ to farm	1,000	500
Truck	1 1½ T.	2,000	1,000
Tractor	2 Med.	4,000	2,000
Gutter cleaner			
Milking machines	4	780	390
Wagons	1 2 T.	300	150
Plows	1 2-14″	220	110
Harrow, disk	1 7′	250	125
Harrow, springtooth	1 10′	140	70
Corn planter			
Grass seeder	Hired		
Cultivator			
Mower	1 7′	300	150
Rake, side del.	1 9′	450	225
Baler	1 P.T.O.	1,500	750
Field chopper			
Blower			
Manure loader			
Manure spreader	1 60-bu.	430	215
Lime and fert. spreader	1 8′	250	125
Electric motors	5	300	150
Misc. tools		350	175
		12,270	6,135
	Total	84,230	54,960

Appendix Table II H. Dairy Farm Capital, Representative Farm
56 cows, 3 men

Item	Number, description, size	New value	Average year value
LAND		Dollars	Dollars
Tillable	136.8A	13,680	13,680
Perm. past.	87.0A	3,480	3,480
Other, woods	223.8A	3,360	3,360
Building and lane space	4.0A	400	400
		20,920	20,920
BUILDINGS			
House	1	12,000	6,000
Barn	1 gable 34' x 185'	36,300	18,150
Silo	1 wood 18' x 38'	3,900	1,950
Machine sheds	1	1,500	750
Fence		1,720	860
Well	1	2,000	1,000
		57,420	28,710
LIVESTOCK			
Cows	56	11,200	11,200
Youngstock	34	3,400	3,400
		14,600	14,600

Item	Number, description, size	New value	Average year value
MACHINERY		Dollars	Dollars
Auto	½ to farm	1,000	500
Truck	1 1½ T.	2,000	1,000
Tractor	2 Med.	4,000	2,000
Gutter cleaner	1	2,200	1,100
Milking machines	4	810	405
Wagons	1 2 T.	300	150
Plows	1 2-14"	220	110
Harrow, disk	1 7'	250	125
Harrow, springtooth	1 10'	140	70
Corn planter	1 2-row	220	110
Grass seeder	1 8'	500	250
Cultivator	1 2-row	230	115
Mower	1 7'	300	150
Rake, side del.	1 9'	450	225
Baler	1 Engine driven	2,400	1,200
Field chopper	Hired		
Blower	Hired		
Manure loader	1	320	160
Manure spreader	1 60-bu.	430	215
Lime and fert. spreader	1 8'	250	125
Electric motors	6	360	180
Misc. tools		400	200
		16,780	8,390
	Total	109,720	72,620

Appendix Table II I. Dairy Farm Capital, Representative Farm
72 cows 3+ men

Item	Number, description, size	New value	Average year value
LAND		Dollars	Dollars
Tillable	176.3A	17,630	17,630
Perm. past.	112.0A	4,480	4,480
Other, woods	288.3A	2,825	2,825
Building and lane space	5.0A	500	500
		25,435	25,435
BUILDINGS			
House	1	12,000	6,000
Barn	1 gable 34' x 235'	45,300	22,650
Silo	1 wood 20' x 40'	4,900	2,450
Machine sheds	1	1,800	900
Fence		1,900	950
Well	1	2,400	1,200
		68,300	34,150
LIVESTOCK			
Cows	72	14,400	14,400
Youngstock	44	4,400	4,400
		18,800	18,800

Item	Number, description, size	New value	Average year value
MACHINERY		Dollars	Dollars
Auto	½ to farm	1,000	500
Truck	1 1½ T.	2,000	1,000
Tractor	2 1 Med.	2,000	1,000
	1 lge.	2,500	1,250
Gutter cleaner	1	2,500	1,250
Milking machines	6	1,200	600
Wagons	2 2 T. Unloading	1,200	600
Plows	2 2-14"	220	110
	3-14"	330	165
Harrow, disk	1 7'	250	125
Harrow, springtooth	1 10'	140	70
Corn planter	1 2-row	220	110
Grass seeder	1 8'	500	250
Cultivator	1 2-row	230	115
Mower	1 7'	300	150
Rake, side del.	1 9'	450	225
Baler	1 Engine driven	2,400	1,200
Field chopper	1 large	2,900	1,450
Blower	1 Aux. engine	400	200
Manure loader	1	320	160
Manure spreader	1 90-bu.	490	245
Lime and fert. spreader	1 8'	250	125
Electric motors	7	420	210
Misc. tools		450	225
		22,720	11,360
	Total	135,255	89,745

Appendix Table III A. Dairy Farm Budget, Representative Farm 16 cows, 1+ man

Item	Unit	Quantity	Price per Unit Dollars	Total Value Dollars
INCOME				
Milk 8,500 lbs.	cwt.	1,338	5.00	6,690
Calves	No.	8	10.00	80
Cull cows	No.	4	120.00	480
Feed bags, used	No.	360	.20	72
Total cash income				7,322
EXPENSES				
Grain, cows 2,000 lbs.	cwt.	320	4.25	1,360
Grain, youngstock	cwt.	67	4.25	284
Milk substitute	cwt.	2.5	9.00	22
Calf starter	cwt.	10	5.50	55
Breeding	cow	16	6.00	96
Vet. and medicine	A. U.	21	4.00	84
Bedding, 65 bu. per A. U.	bu.	1,365	.03	41
Dairy supplies	cow	16	2.00	32
Seed	annual	—	—	101
Fertilizer	ton	9.65	70.00	676
Machine hire (seeding)	annual	--	—	21
Baling twine	bales	—	—	—
Auto expenses, ½ to farm	annual	—	—	125
Truck expenses	annual	—	—	160
Tractor expenses	annual	—	—	140
Other machine expenses	annual	—	—	35
Electricity[1]	annual	—	—	205
Bldg. and fence repairs[1]	annual	—	—	317
Property taxes[1]	annual	—	—	348
Ins., bldgs. and cattle[1]	annual	—	—	165
Insurance, liability	annual	—	—	60
Hired labor, full-time	annual	—	—	—
Hired labor, part-time	month	3	200.00	600
Total cash expenses				4,934
Net cash income				2,388
Depreciation				1,394
Net farm income				994

[1] Includes house.

Appendix Table III B. Dairy Farm Budget, Representative Farm 24 cows, 1+ man

Item	Unit	Quantity	Price per Unit Dollars	Total Value Dollars
INCOME				
Milk 8,500 lbs.	cwt.	2,018	5.00	10,090
Calves	No.	11	10.00	110
Cull cows	No.	6	120.00	720
Feed bags, used	No.	530	.20	106
Total cash income				11,026
EXPENSES				
Grain, cows 2,000 lbs.	cwt.	480	4.25	2,040
Grain, youngstock	cwt.	93.4	4.25	397
Milk substitute	cwt.	3.5	9.00	32
Calf starter	cwt.	14	5.50	77
Breeding	cow	24	6.00	144
Vet. and medicine	A. U.	31	4.00	124
Bedding, 65 bu. per A. U.	bu.	2,015	.03	60
Dairy supplies	cow	24	2.00	48
Seed	annual	—	—	144
Fertilizer	ton	14.2	70.00	994
Machine hire	annual	—	—	250
Baling twine	bales	6	10.00	60
Auto expenses, ½ to farm	annual	—	—	150
Truck expenses	annual	—	—	160
Tractor expenses	annual	—	—	235
Other machine expenses	annual	—	—	70
Electricity[1]	annual	—	—	255
Bldg. and fence repairs[1]	annual	—	—	414
Property taxes[1]	annual	—	—	452
Ins., bldgs. and cattle[1]	annual	—	—	213
Insurance, liability	annual	—	—	60
Hired labor, full-time	annual	—	—	—
Hired labor, part-time	month	3	200.00	600
Total cash expenses				6,989
Net cash income				4,037
Depreciation				1,758
Net farm income				2,279

[1] Includes house.

Appendix Table III C. Dairy Farm Budget, Representative Farm 40 cows, 1+ man

Item	Unit	Quantity	Price per Unit Dollars	Total Value Dollars
INCOME				
Milk 8,500 lbs.	cwt.	3,378	5.00	16,890
Calves	No.	19	10.00	190
Cull cows	No.	10	120.00	1,200
Feed bags, used	No.	890	.20	178
Total cash income				18,458
EXPENSES				
Grain, cows 2,000 lbs.	cwt.	800	4.25	3,400
Grain, youngstock	cwt.	160	4.25	680
Milk substitute	cwt.	6	9.00	54
Calf starter	cwt.	24	5.50	132
Breeding	cow	40	6.00	240
Vet. and medicine	A. U.	52	4.00	208
Bedding, 65 bu. per A. U.	bu.	3,380	.03	101
Dairy supplies	cow	40	2.00	80
Seed	annual	—	—	229
Fertilizer	ton	22.4	70.00	1,568
Machine hire	annual	—	—	338
Baling twine	bales	10	10.00	100
Auto expenses, ½ to farm	annual	—	—	175
Truck expenses	annual	—	—	200
Tractor expenses	annual	—	—	430
Other machine expenses	annual	—	—	165
Electricity[1]	annual	—	—	360
Bldg. and fence repairs[1]	annual	—	—	546
Property taxes[1]	annual	—	—	659
Ins., bldgs. and cattle[1]	annual	—	—	308
Insurance, liability	annual	—	—	70
Hired labor, full-time	annual	—	—	—
Hired labor, part-time	month	5	200.00	1,000
Total cash expenses				11,043
Net cash income				7,415
Depreciation				2,623
Net farm income				4,792

[1] Includes house.

Appendix Table III D. Dairy Farm Budget, Representative Farm 24 cows, 2+ men

Item	Unit	Quantity	Price per Unit Dollars	Total Value Dollars	With 1 of 2 Men Hired
INCOME					
Milk 8,500 lbs.	cwt.	2,018	5.00	10,090	
Calves	No.	11	10.00	110	
Cull cows	No.	6	120.00	720	
Feed bags, used	No.	530	.20	106	
Total cash income				11,026	
EXPENSES					
Grain, cows 2,000 lbs.	cwt.	480	4.25	2,040	
Grain, youngstock	cwt.	93.4	4.25	397	
Milk substitute	cwt.	3.5	9.00	32	
Calf starter	cwt.	14	5.50	77	
Breeding	cow	24	6.00	144	
Vet. and medicine	A. U.	31	4.00	124	
Bedding, 65 bu. per A. U.	bu.	2,015	.03	60	
Dairy supplies	cow	24	2.00	48	
Seed	annual	—	—	162	
Fertilizer	ton	14.3	70.00	1,031	
Machine hire (seeding)	annual	—	—	32	
Baling twine	bales	9	10.00	90	
Auto expenses, ½ to farm	annual	—	—	150	
Truck expenses	annual	—	—	160	
Tractor expenses	annual	—	—	235	
Other machine expenses	annual	—	—	80	
Electricity[1]	annual	—	—	255	
Bldg. and fence repairs[1]	annual	—	—	385	
Property taxes[1]	annual	—	—	462	
Ins., bldgs. and cattle[1]	annual	—	—	215	
Insurance, liability	annual	—	—	51	+ 42
Hired labor, full-time	annual	—	—	—	+ 2,400
Hired labor, part-time	month	1	200.00	200	
Total cash expenses				6,430	8,872
Net cash income				4,596	2,154
Depreciation				1,727	1,727
Net farm income				2,869	427

[1] Includes house.

Appendix Table III E. Dairy Farm Budget, Representative Farm 40 cows, 2+ men

Item	Unit	Quantity	Price per Unit Dollars	Total Value Dollars	With 1 of 2 Men Hired
INCOME					
Milk 8,500 lbs.	cwt.	3,378	5.00	16.890	
Calves	No.	19	10.00	190	
Cull cows	No.	10	120.00	1,200	
Feed bags, used	No.	890	.20	178	
Total cash income				18,458	
EXPENSES					
Grain, cows 2,000 lbs.	cwt.	800	4.25	3,400	
Grain, youngstock	cwt.	160	4.25	680	
Milk substitute	cwt.	6	9.00	54	
Calf starter	cwt.	24	5.50	132	
Breeding	cow	40	6.00	240	
Vet. and medicine	A. U.	52	4.00	208	
Bedding, 65 bu. per A. U.	bu.	3,380	.03	101	
Dairy supplies	cow	40	2.00	80	
Seed	annual	—	—	229	
Fertilizer	ton	22.4	70.00	1,571	
Machine hire (corn planter, seeder, field chopper)	annual	—	—	411	
Baling twine	bales	10	10.00	100	
Auto expenses, ½ to farm	annual	—	—	175	
Truck expenses	annual	—	—	200	
Tractor expenses	annual	—	—	410	
Other machine expenses	annual	—	—	125	
Electricity[1]	annual	—	—	360	
Bldg. and fence repairs[1]	annual	—	—	546	
Property taxes[1]	annual	—	—	659	
Ins., bldgs. and cattle[1]	annual	—	—	308	
Insurance, liability	annual	—	—	53	+ 42
Hired labor, full-time	annual	—	—	—	+ 2,400
Hired labor, part-time	month	1	200.00	200	
Total cash expenses				10,242	12,684
Net cash income				8,216	5.774
Depreciation				2,388	2,388
Net farm income				5,828	3,386

[1] Includes house.

Appendix Table III F. Dairy Farm Budget, Representative Farm 56 cows, 2+ men

Item	Unit	Quantity	Price per Unit Dollars	Total Value Dollars	With 1 of 2 Men Hired
INCOME					
Milk 8,500 lbs.	cwt.	4,738	5.00	23,690	
Calves	No.	26	10.00	260	
Cull cows	No.	14	120.00	1,680	
Feed bags, used	No.	1,250	.20	250	
Total cash income				25,880	
EXPENSES					
Grain, cows 2,000 lbs.	cwt.	1,120	4.25	4,760	
Grain, youngstock	cwt.	226.8	4.25	964	
Milk substitute	cwt.	8.5	9.00	77	
Calf starter	cwt.	34	5.50	187	
Breeding	cow	56	6.00	336	
Vet. and medicine	A. U.	73	4.00	292	
Bedding, 65 bu. per A. U.	bu.	4,745	.03	142	
Dairy supplies	cow	56	2.00	112	
Seed	annual	—	—	336	
Fertilizer	ton	32.8	70.00	2,299	
Machine hire (field chopper)	annual	—	—	474	
Baling twine	bales	14	10.00	140	
Auto expenses, ½ to farm	annual	—	—	200	
Truck expenses	annual	—	—	240	
Tractor expenses	annual	—	—	624	
Other machine expenses	annual	—	—	260	
Electricity[1]	annual	—	—	465	
Bldg. and fence repairs[1]	annual	—	—	681	
Property taxes[1]	annual	—	—	885	
Ins., bldgs. and cattle[1]	annual	—	—	405	
Insurance, liability	annual	—	—	73	+ 42
Hired labor, full-time	annual	—	—	—	+ 2,400
Hired labor, part-time	month	6	200.00	1,200	
Total cash expenses				15,152	17,594
Net cash income				10,728	8,286
Depreciation				3,119	3,119
Net farm income				7,609	5,167

[1] Includes house.

Appendix Table III G. Dairy Farm Budget, Representative Farm 40 cows, 3 men

Item	Unit	Quantity	Price per Unit Dollars	Total Value Dollars	With 2 of 3 Men Hired
INCOME					
Milk 8,500 lbs.	cwt.	3,378	5.00	16,890	
Calves	No.	19	10.00	190	
Cull cows	No.	10	120.00	1,200	
Feed bags, used	No.	890	.20	178	
Total cash income				18,458	
EXPENSES					
Grain, cows 2,000 lbs.	cwt.	800	4.25	3,400	
Grain, youngstock	cwt.	160	4.25	680	
Milk substitute	cwt.	6	9.00	54	
Calf starter	cwt.	24	5.50	132	
Breeding	cow	40	6.00	240	
Vet. and medicine	A. U.	52	4.00	208	
Bedding, 65 bu. per A. U.	bu.	3,380	.03	101	
Dairy supplies	cow	40	2.00	80	
Seed	annual	—	—	259	
Fertilizer	ton	23.3	70.00	1,632	
Machine hire (seeder)	annual	—	—	49	
Baling twine	bales	15	10.00	150	
Auto expenses, ½ to farm	annual	—	—	175	
Truck expenses	annual	—	—	220	
Tractor expenses	annual	—	—	374	
Other machine expenses	annual	—	—	130	
Electricity[1]	annual	—	—	360	
Bldg. and fence repairs[1]	annual	—	—	502	
Property taxes[1]	annual	—	—	675	
Ins., bldgs. and cattle[1]	annual	—	—	310	
Insurance, liability	annual	—	—	50	+ 84
Hired labor, full-time	annual	—	—	—	+ 4,800
Hired labor, part-time	month	—	200.00	—	
Total cash expenses				9,781	14,665
Net cash income				8,677	3,793
Depreciation				2,299	2,299
Net farm income				6,378	1,494

[1] Includes house.

Appendix Table III H. Dairy Farm Budget, Representative Farm 56 cows, 3 men

Item	Unit	Quantity	Price per Unit Dollars	Total Value Dollars	With 2 of 3 Men Hired
INCOME					
Milk 8,500 lbs.	cwt.	4,738	5.00	23,690	
Calves	No.	26	10.00	260	
Cull cows	No.	14	120.00	1,680	
Feed bags, used	No.	1,250	.20	250	
Total cash income				25,880	
EXPENSES					
Grain, cows 2,000 lbs.	cwt.	1,120	4.25	4,760	
Grain, youngstock	cwt.	226.8	4.25	964	
Milk substitute	cwt.	8.5	9.00	77	
Calf starter	cwt.	341	5.50	187	
Breeding	cow	56	6.00	336	
Vet. and medicine	A. U.	73	4.00	292	
Bedding, 65 bu. per A. U.	bu.	4,745	.03	142	
Dairy supplies	cow	56	2.00	112	
Seed	annual	—	—	336	
Fertilizer	ton	32.8	70.00	2,299	
Machine hire (field chopper)	anunal	—	—	474	
Baling twine	bales	14	10.00	140	
Auto expenses, ½ to farm	annual	—	—	200	
Truck expenses	annual	—	—	240	
Tractor expenses	annual	—	—	624	
Other machine expenses	annual	—	—	260	
Electricity[1]	annual	—	—	465	
Bldg. and fence repairs[1]	annual	—	—	681	
Property taxes[1]	annual	—	—	885	
Ins., bldgs. and cattle[1]	annual	—	—	405	
Insurance, liability	annual	—	—	51	+ 84
Hired labor, full-time	annual	—	—	—	+ 4,800
Hired labor, part-time	month	—	200.00	—	
Total cash expenses				13,930	18,814
Net cash income				11,950	7,066
Depreciation				3,110	3,110
Net farm income				8,840	3,956

[1] Includes house.

Appendix Table III I. Dairy Farm Budget, Representative Farm 72 cows, 3+ men

Item	Unit	Quantity	Price per Unit Dollars	Total Value Dollars	With 2 of 3 Men Hired
INCOME					
Milk 8,500 lbs.	cwt.	6,098	5.00	30,490	
Calves	No.	34	10.00	340	
Cull cows	No.	18	120.00	2,160	
Feed bags, used	No.	1,610	.20	322	
Total cash income				33,312	
EXPENSES					
Grain, cows 2,000 lbs.	cwt.	1,440	4.25	6,120	
Grain, youngstock	cwt.	293.5	4.25	1,247	
Milk substitute	cwt.	11	9.00	99	
Calf starter	cwt.	44	5.50	242	
Breeding	cow	72	6.00	432	
Vet. and medicine	A. U.	94	4.00	376	
Bedding, 65 bu. per A. U.	bu.	6,110	.03	183	
Dairy supplies	cow	72	2.00	144	
Seed	annual	—	—	434	
Fertilizer	ton	42.3	70.00	2,962	
Machine hire (truck)	annual	—	—	96	
Baling twine	bales	18	10.00	180	
Auto expenses, ½ to farm	annual	—	—	225	
Truck expenses	annual	—	—	280	
Tractor expenses	annual	—	—	953	
Other machine expenses	annual	—	—	385	
Electricity[1]	annual	—	—	570	
Bldg. and fence repairs[1]	annual	—	—	809	
Property taxes[1]	annual	—	—	1,078	
Ins., bldgs. and cattle[1]	annual	—	—	500	
Insurance, liability	annual	—	—	57	+ 84
Hired labor, full-time	annual	—	—	—	+ 4,800
Hired labor, part-time	month	1	200.00	200	
Total cash expenses				17,572	22,456
Net cash income				15,740	10,856
Depreciation				3,911	3,911
Net farm income				11,829	6,945

[1] Includes house.

Appendix Table IV A. Landlord-Tenant Division of Unshared Expenses and of Net Income, Representative Farm 16 cows, 1+ man

UNSHARED EXPENSES	Percent	Dollars
Landlord's contribution:		
Cash expenses borne entirely by landlord[1]		830
Depreciation (—$100. auto)		1,294
4% interest on capital (—$500. on auto)[2]		1,176
Total unshared	53	3,300
Operator's contribution:		
Cash expenses borne entirely by operator[3]		725
Operator's labor		2,400
Total unshared	47	3,125
INCOME		
Division of income (with milk $5.00 cwt)		
Net cash income		2,388
Share of each party[4]		
Landlord		1,266
Operator		1,122
Operator's living allowance		1,800
Remainder of net income for savings		—678
Division of income (with 10% higher prices received):		
Net cash income		3,120
Share of each party[4]		
Landlord		1,654
Operator		1,466
Operator's living allowance		1,800
Remaining for savings		—334

[1] Taxes, building and fence repairs, insurance on buildings and cattle.
[2] Buildings and equipment at ½ new price.
[3] Auto, hired labor.
[4] In same proportion as the total unshared contribution of each.

Appendix Table IV B. Landlord-Tenant Division of Unshared Expenses and of Net Income, Representative Farm 24 cows, 1+ man

	Percent	Dollars
UNSHARED EXPENSES		
Landlord's contribution:		
Cash expenses borne entirely by landlord[1]		1,079
Depreciation (—$100. auto)		1,658
4% interest on capital (—$500. on auto)[2]		1,482
Total unshared	57	4,219
Operator's contribution:		
Cash expenses borne entirely by operator[3]		750
Operator's labor		2,400
Total unshared	43	3,150
INCOME		
Division of income:		
Net cash income		4,037
Share of each party[4]		
Landlord		2,301
Operator		1,736
Operator's living allowance		1,800
Remainder of net income for savings		—64
Division of income (with 10% higher prices received):		
Net cash income		5,139
Share of each party[4]		
Landlord		2,929
Operator		2,210
Operator's living allowance		1,800
Remaining for savings		410

[1] Taxes, building and fence repairs, insurance on buildings and cattle.
[2] Buildings and equipment at ½ new price.
[3] Auto, hired labor.
[4] In same proportion as the total unshared contribution of each.

Appendix Table IV C. Landlord-Tenant Division of Unshared Expenses and of Net Income, Representative Farm 40 cows, 1+ man

	Percent	Dollars
UNSHARED EXPENSES		
Landlord's contribution:		
Cash expenses borne entirely by landlord[1]		1,513
Depreciation (—$100. auto)		2,523
4% interest on capital (—$500. on auto)[2]		2,202
Total unshared	64	6,238
INCOME		
Operator's contribution:		
Cash expenses borne entirely by operator[3]		1,175
Operator's labor		2,400
Total unshared	36	3,575
Division of income:		
Net cash income		7,415
Share of each party[4]		
Landlord		4,746
Operator		2,669
Operator's living allowance		1,800
Remainder of net income for Savings		869
Division of income (with 10% higher prices received):		
Net cash income		9,261
Share of each party[4]		
Landlord		5,927
Operator		3,334
Operator's living allowance		1,800
Remaining for savings		1,534

[1] Taxes, building and fence repairs, insurance on buildings and cattle.
[2] Buildings and equipment at ½ new price.
[3] Auto, hired labor.
[4] In same proportion as the total unshared contribution of each.

Appendix Table IV D. Landlord-Tenant Division of Unshared Expenses and of Net Income, Representative Farm
24 cows, 2+ men

	Percent	Dollars
UNSHARED EXPENSES		
Landlord's contribution:		
Cash expenses borne entirely by landlord[1]		1,062
Depreciation (—$100. auto)		1,627
4% interest on capital (—$500. auto)[2]		1,506
Total unshared	45	4,195
Operator's contribution:		
Cash expenses borne entirely by operator[3]		2,750
Operator's labor		2,100
Total unshared	55	5,150
INCOME		
Division of income:		
Net cash income		2,154
Share of each party[4]		
Landlord		969
Operator		1,185
Operator's living allowance		1,800
Remainder if net income for savings		—615
Division of income (with 10% higher prices received):		
Net cash income		3,257
Share of each party[4]		
Landlord		1,466
Operator		1,791
Operator's living allowance		1,800
Remaining for savings		—9

[1] Taxes, building and fence repairs, insurance on buildings and cattle.
[2] Buildings and equipment at ½ new price.
[3] Auto, hired labor.
[4] In same proportion as the total unshared contribution of each.

Appendix Table IV E. Landlord-Tenant Division of Unshared Expenses and of Net Income, Representative Farm 40 cows, 2+ men

	Percent	Dollars
UNSHARED EXPENSES		
Landlord's contribution:		
Cash expenses borne entirely by landlord[1]		1,513
Depreciation (—$100. auto)		2,288
4% interest on capital (—$500. auto)[2]		2,148
Total unshared	53	5,949
Operator's contribution:		
Cash expenses borne entirely by operator[3]		2,775
Operator's labor		2,400
Total unshared	47	5,175
INCOME		
Division of income:		
Net cash income		5,774
Share of each party[4]		
Landlord		3,060
Operator		2,714
Operator's living allowance		1,800
Remainder of net income for savings		914
Division of income (with 10% higher prices received):		
Net cash income		7,619
Share of each party[4]		
Landlord		4,038
Operator		3,581
Operator's living allowance		1,800
Remaining for savings		1,781

[1] Taxes, building and fence repairs, insurance on buildings and cattle.
[2] Buildings and equipment at ½ new price.
[3] Auto, hired labor.
[4] In same proportion as the total unshared contribution of each.

Appendix Table IV F. Landlord-Tenant Division of Unshared Expenses and of Net Income, Representative Farm 56 cows, 2+ men

	Percent	Dollars
UNSHARED EXPENSES		
Landlord's contribution:		
Cash expenses borne entirely by landlord[1]		1,971
Depreciation (—$100. auto)		3,019
4% interest on capital (—$500. auto)[2]		2,888
Total unshared	56	7,878
Operator's contribution:		
Cash expenses borne entirely by operator[3]		3,800
Operator's labor		2,400
Total unshared	44	6,200
INCOME		
Division of income:		
Net cash income		8,286
Share of each party[4]		
Landlord		4,640
Operator		3,646
Operator's living allowance		1,800
Remainder of net income for savings		1,846
Division of income (with 10% higher prices received):		
Net cash income		10,874
Share of each party[4]		
Landlord		6,089
Operator		4,785
Operator's living allowance		1,800
Remaining for savings		2,985

[1] Taxes, building and fence repairs, insurance on buildings and cattle.
[2] Buildings and equipment at ½ new price.
[3] Auto, hired labor.
[4] In same proportion as the total unshared contribution of each.

Appendix Table IV G. Landlord-Tenant Division of Unshared Expenses and of Net Income, Representative Farm 40 cows, 3 men

	Percent	Dollars
UNSHARED EXPENSES		
Landlord's contribution:		
Cash expenses borne entirely by landlord[1]		1,487
Depreciation (—$100. auto)		2,199
4% interest on capital (—$500. auto)[2]		2,178
Total unshared	44	5,864
Operator's contribution:		
Cash expenses borne entirely by operator[3]		4,975
Operator's labor		2,400
Total unshared	56	7,375
INCOME		
Division of income:		
Net cash income		3,793
Share of each party[4]		
Landlord		1,669
Operator		2,124
Operator's living allowance		1,800
Remainder of net income for savings		324
Division of income (with 10% higher prices received):		
Net cash income		5,638
Share of each party[4]		
Landlord		2,481
Operator		3,157
Operator's living allowance		1,800
Remaining for savings		1,357

[1] Taxes, building and fence repairs, insurance on buildings and cattle.
[2] Buildings and equipment at ½ new price.
[3] Auto, hired labor.
[4] In same proportion as the total unshared contribution of each.

Appendix Table IV H. Landlord-Tenant Division of Unshared Expenses and of Net Income, Representative Farm 56 cows, 3+ men

UNSHARED EXPENSES	Percent	Dollars
Landlord's contribution:		
Cash expenses borne entirely by landlord[1]		1,971
Depreciation (—$100. auto)		3,010
4% interest on capital (—$500. auto)[2]		2,884
Total unshared	52	7,865
Operator's contribution:		
Cash expenses borne entirely by operator[3]		5,000
Operator's labor		2,400
Total unshared	48	7,400
INCOME		
Division of income:		
Net cash income		7,066
Share of each party[4]		
Landlord		3,674
Operator		3,392
Operator's living allowance		1,800
Remainder of net income for savings		1,592
Division of income (with 10% higher prices received):		
Net cash income		9,654
Share of each party[4]		
Landlord		5,020
Operator		4,634
Operator's living allowance		1,800
Remaining for savings		2,386

[1] Taxes, building and fence repairs, insurance on buildings and cattle.
[2] Buildings and equipment at ½ new price.
[3] Auto, hired labor.
[4] In same proportion as the total unshared contribution of each.

Appendix Table IV L. Landlord-Tenant Division of Unshared Expenses and of Net Income, Representative Farm 72 cows, 3 men

UNSHARED EXPENSES	Percent	Dollars
Landlord's contribution:		
Cash expenses borne entirely by landlord[1]		2,387
Depreciation (—$100. auto)		3,811
4% interest on capital (—$500. auto)[2]		3,570
Total unshared	56	9,768
Operator's contribution:		
Cash expenses borne entirely by operator[3]		5,225
Operator's labor		2,400
Total unshared	44	7,625
INCOME		
Division of income:		
Net cash income		10,856
Share of each party[4]		
Landlord		6,079
Operator		4,777
Operator's living allowance		1,800
Remainder of net income for savings		2,977
Division of income (with 10% higher prices received):		
Net cash income		14,187
Share of each party[4]		
Landlord		7,945
Operator		6,242
Operator's living allowance		1,800
Remaining for savings		4,442

[1] Taxes, building and fence repairs, insurance on buildings and cattle.
[2] Buildings and equipment at ½ new price.
[3] Auto, hired labor.
[4] In same proportion as the total unshared contribution of each.

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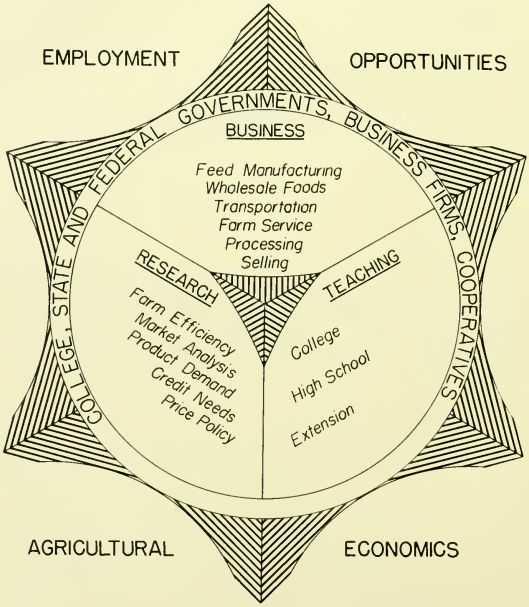

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